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CAXTON HOUSE, WESTMINSTER.

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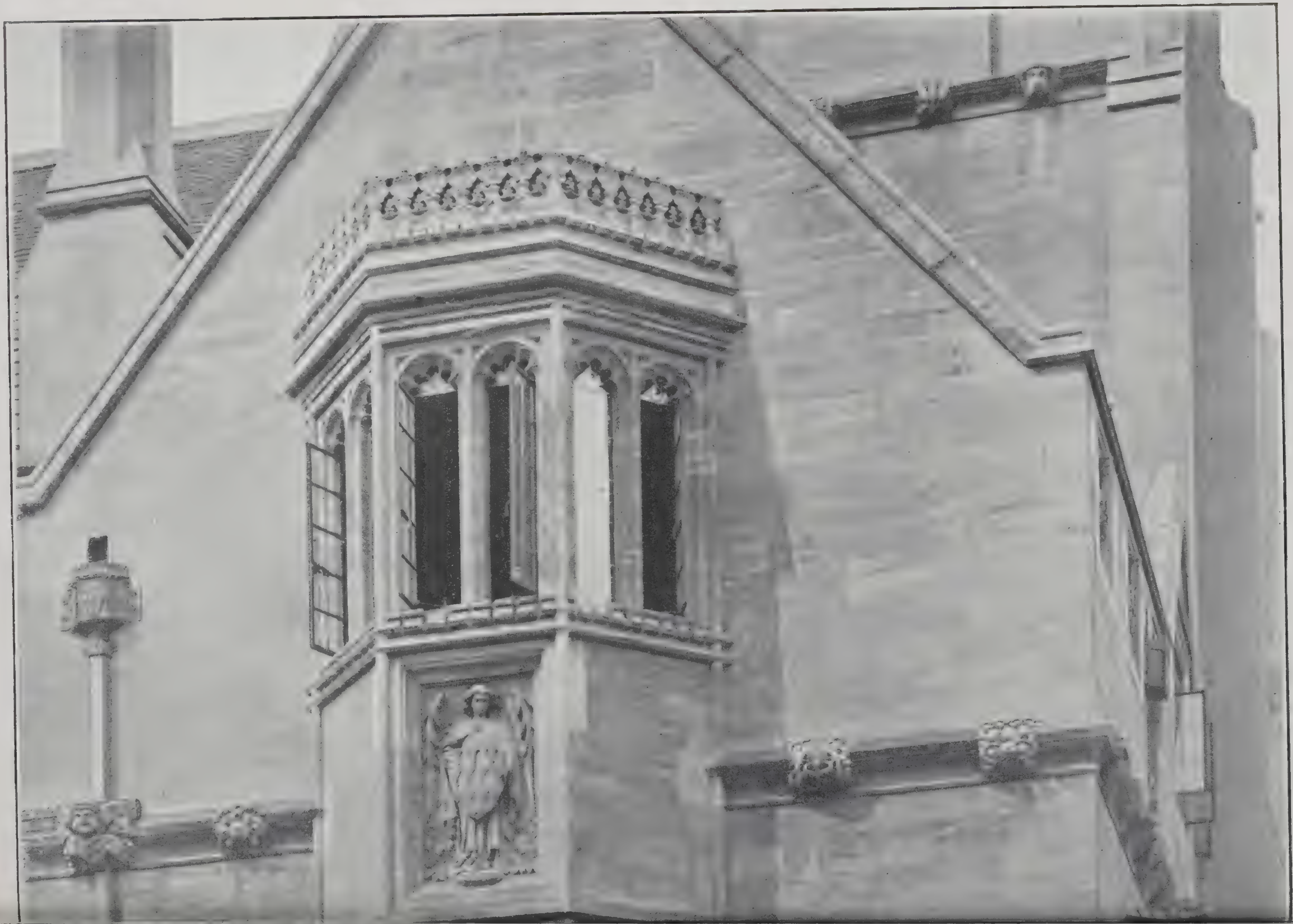
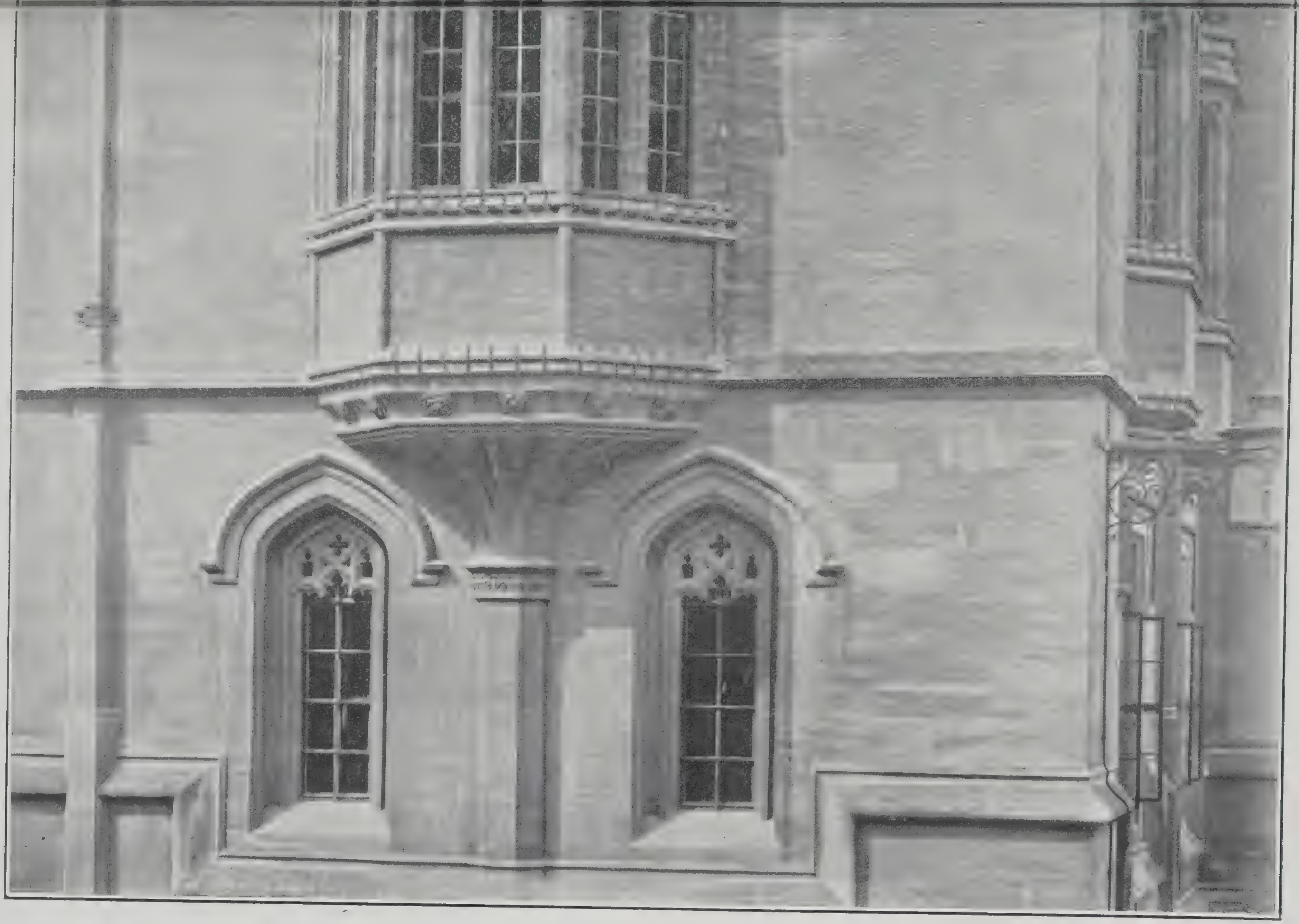
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, July 5th*, 1911





ORIEL ON NEW BUILDING AT MAGDALEN COLLEGE, OXFORD. THE LATE G. F. BODLEY AND THOMAS GARNER, ARCHITECTS.

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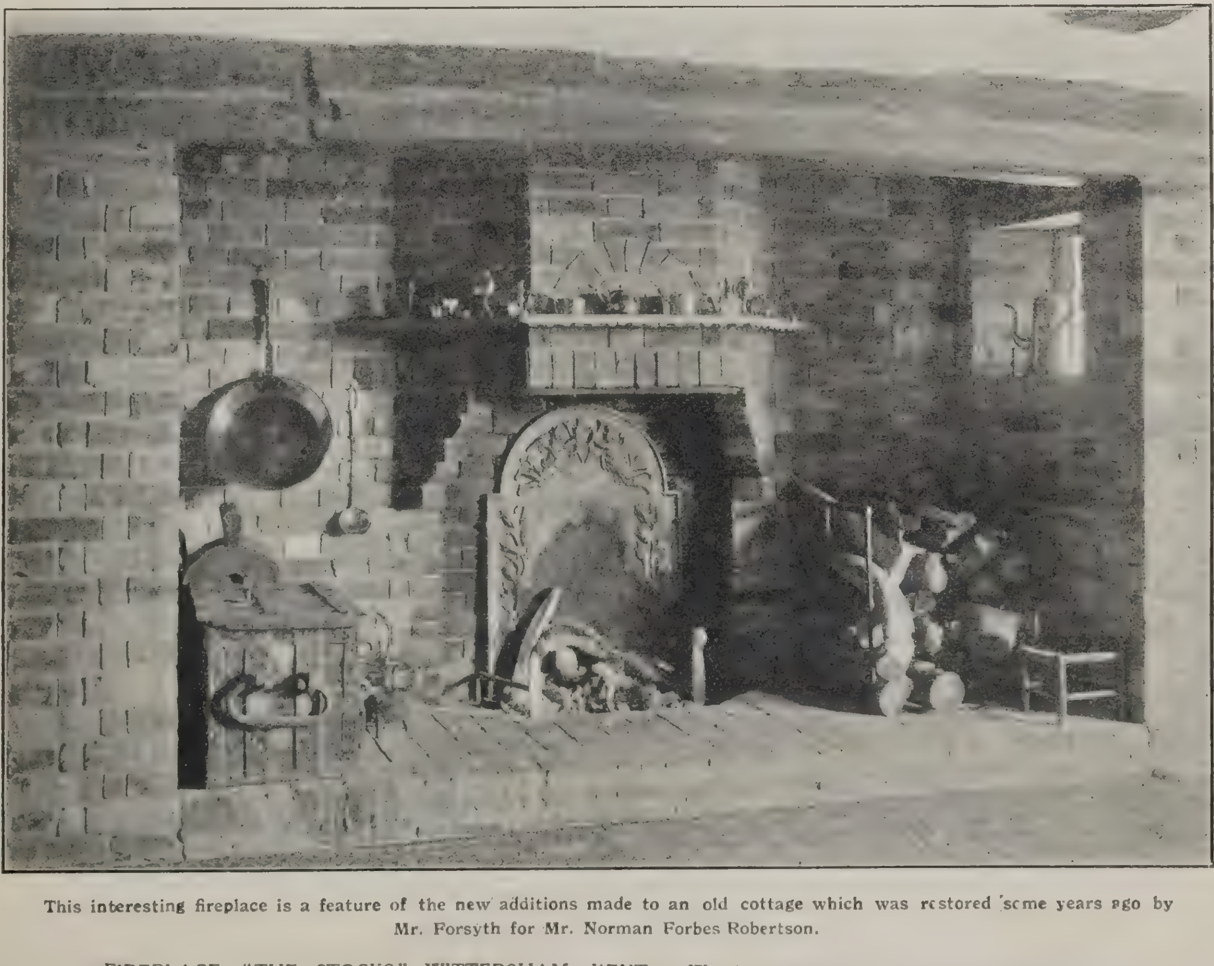
THE ARCHITECTS' &
BUILDERS' JOURNAL.

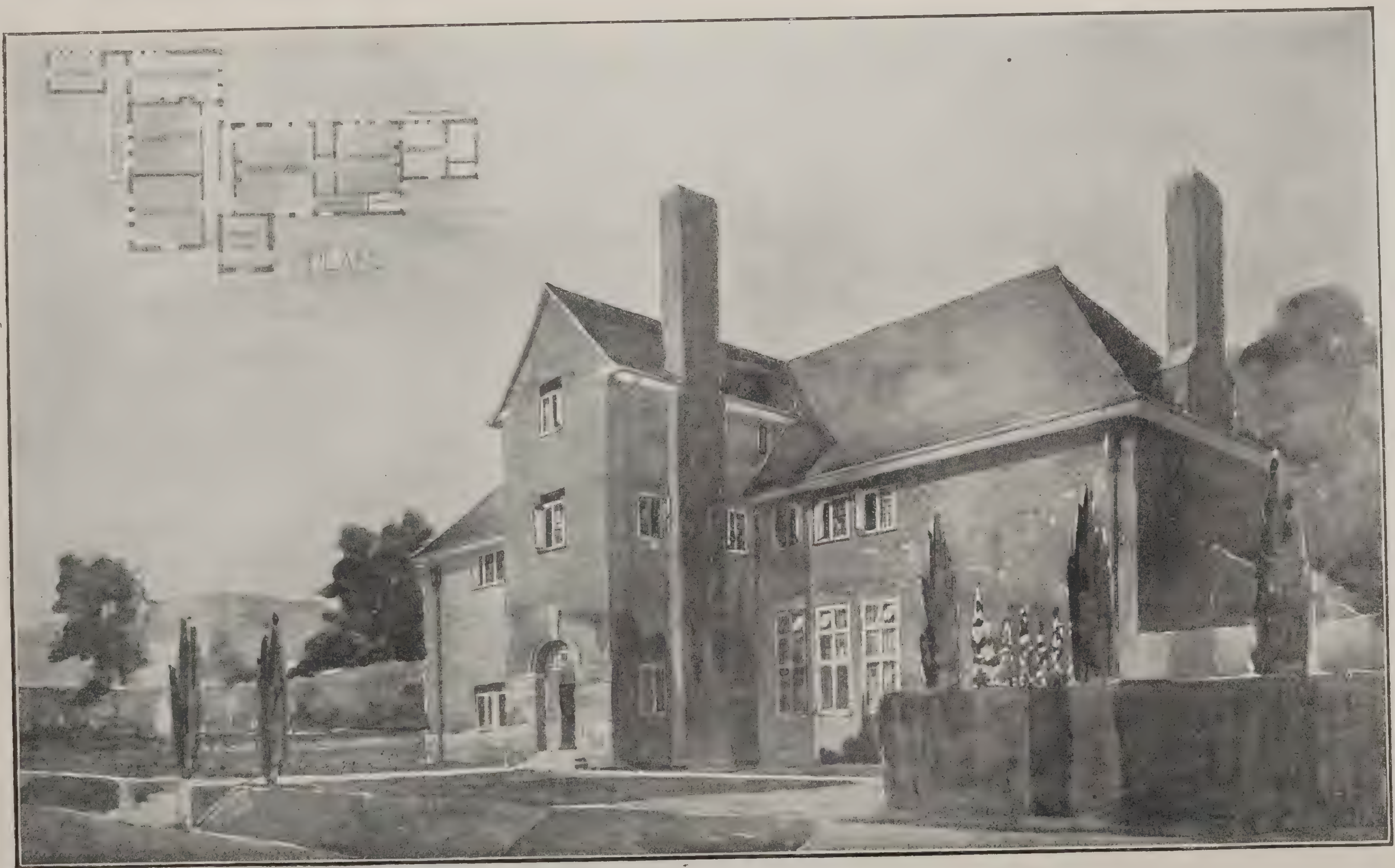
WEDNESDAY,
JULY 5th, 1911.

Volume XXXIV. No. 858.



This interesting fireplace is a feature of the new additions made to an old cottage which was restored some years ago by Mr. Forsyth for Mr. Norman Forbes Robertson.

FIREPLACE, "THE STOCKS," WITTERSHAM, KENT. W. A. FORSYTH, F.R.I.B.A., ARCHITECT.



This school, which is now in course of erection, is being built of local red bricks, and covered with hand-made sandfaced tiles, while the staircase and all external joinery are of oak. Accommodation is provided, under the Board of Education regulations, for boarding 28 scholars, and dining and teaching 40—with rooms for master and matron. Provision has been made for adding a master's house in the future. Messrs. J. Day and Son, contractors and lime and brick manufacturers, are carrying out the work at a cost of £2,360, to the designs and under the superintendence of the College architect, **Mr. H. G. Ibberson, F.R.I.B.A.**, of London.

PREPARATORY SCHOOL, THE COLLEGE, BISHOP'S STORTFORD, HERTS. H. G. IBBERSON. F.R.I.B.A., ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

JULY 5th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 858.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

Respecting Wren.

THE meeting of the Institute on Monday last week was the occasion, in connection with Mr. Weaver's interesting paper on the unique copy of the *Parentalia* which has been secured for the Library, of a kind of Wren Festival, characterised as such both by the special illustrations to the lecture, and by the exhibition of a number of collected drawings and photographs of Wren's principal buildings. The consensus of admiration for Wren's work, which is now almost a matter of course with English architects and lovers of architecture, offers, to those who remember modern architectural history, a curious contrast to the contempt for his architecture which was commonly felt and expressed at the time of the Gothic revival. It is difficult to realise that there were then men of undoubted architectural genius and enthusiasm, such as Pugin, who would gladly have seen St. Paul's burned down, so that there might have been a chance of erecting a Gothic cathedral in its place. Our architectural enthusiasms seem to move in cycles, so that the feelings and preferences of one generation are a mystery to another of less than a century later; and it is possible that the present enthusiasm for Wren's work needs to be tempered with a little discrimination.

Wren's position in the history of architecture is a peculiar one. He would have been a distinguished man in his generation in any case; he was already such, indeed, before anything was heard of him as an architect; but there can be no doubt that he owed his great fame in the latter capacity mainly to the wonderful opportunity created for him by the Fire of London; such an opportunity as hardly comes to an individual architect once in a millennium. That he rose to the occasion is equally true, and it is a fortunate circumstance, for London more especially, that the opportunity was met by a person so peculiarly fitted to cope with it.

And it is rather strange to consider that Wren's peculiar faculty for dealing with a great rebuilding scheme arose from the fact that he was not exactly what would be called, in the modern sense of the word, an artist, either in feeling or in accomplishment. Essentially his genius was scientific rather than artistic. He first came into notice as an astronomer; and, as Mr. Weaver's lecture showed us, the scientific bent of his mind was exhibited still earlier in his interest in dissection, in his solving (at the age of sixteen) a geometrical problem of Pascal's, and in various mechanical inventions and experiments. But he was of such active and energetic temperament of mind that all kinds of human effort interested him; and it was the fact of his finding himself, at his visit to Paris in 1665, amid all the great work in progress to gratify the building ambition of Louis XIV., that turned his thoughts more especially to architecture. He could understand all this, as he seems to have been able to understand anything that he gave his mind to; and it was no wonder that, finding architecture the ruling passion of the day in France, and being brought into contact also with the masterful though florid genius of Bernini, the ruling spirit of the moment, he was carried away by a new enthusiasm. As Miss Milman puts it, "he went to Paris an astronomer, and returned an architect." He busied himself in surveying "the most esteemed fabricks of Paris and the country round"; the Louvre was his daily object, where a thousand men were employed in rearing columns and entablatures, and others in carving and inlaying; the operations "forming a school of architecture, the best probably of this day in Europe." Yet, but for the Great Fire, it is quite possible that his main efforts might have still lain in the direction of science. By a happy coincidence of events, he acquired a great deal of architectural experience and insight just in time to turn it to account on the largest scale.

The materials, however, were ready made to his hand, according to the view then taken of architecture. That such was his own view is evident from his sarcastic remarks on Versailles and its "little curiosities of ornaments," and the influence of feminine taste. "The Women, as they make here [in Paris] the language and fashions and meddle with Politics and Philosophy, so they sway also in architecture; works of Filgrand and little Knacks are in great vogue, but building certainly ought to have the attribute of eternal, and therefore the only thing incapable of new Fashions." And what Wren meant by the attribute of being eternal is obvious enough; he meant the scholastic forms of the Renaissance, the accepted forms of column and pilaster and cornice; those to him were the elements of architecture. The picturesque sketches of irregular combinations of forms and materials, many of which we see every year on the walls of the Royal Academy, Wren would have scorned. He would have been ready to echo the words of the Spirit in Clough's *Dipsychus*:—

> "Maturer optics don't delight
> In childish dim religious light,
> In evanescent vague effects
> That shirk, not face our intellects;
> They love not fancies just betrayed,
> And artful tricks of light and shade,
> But pure form nakedly displayed,
> And all things absolutely made."

And hence we say that Wren was not exactly an "artist" in the sense in which the word would be used now. He had no intention of creating anything new or original in architecture; he did not, probably, design any of the decorative detail on his buildings, much of which is by no means good. Nor is his type of Renaissance architecture the best that could be shown. It has been rather too complacently accepted as such. No one (we should think) can contemplate the great court of the Louvre without feeling that here there is a grace and refinement of detail which we very rarely find in Wren. There is a kind of prosaic square-cut style about his work, in comparison with the best French Renaissance, and it strikes foreigners so, where we do not see it ourselves. A distinguished French architect, when on an excursion to Greenwich at the last architectural Conference, said in reference to the treatment of the Attic on the river front—"I call that brutal." Modern French Renaissance tends to be too florid, no doubt, in our eyes; but to French eyes Wren is too naïve. An eye for outline and mass he had in a high degree; nothing could be more charming in this sense than the western cupolas of St. Paul's; but the ornamental detail will not bear looking into, though it does not intrude on or spoil the general impression. But this weak and rather flabby carved ornament is the English style of work of the day, accepted by Wren as he found it; the vernacular of the contemporary carver; very good in execution, but bad in æsthetic. Wren was not personally responsible for it, but neither did he seem able to rise above it, or to suggest anything better.

What Wren really was might be expressed by the title of Ibsen's well-known play; he was emphatically a "Master-Builder." He was a born architect, in the sense that architecture means absolute mastery of constructional problems, and the power, as one may say, of thinking in plan, and regarding the building as the development of plan. This is remarkably illustrated in the plans of his London churches. They follow no stereotyped pattern; they are continually varied. We have such distinct conceptions as the beautiful plan of Walbrook; the St. Benet Fink plan as a long-shaped decagon; St. Clement Danes with its semicircular east end; St. Swithin with its octagon plan; St. George, Botolph Lane, with its four piers in a square plan; St. Antholin planned as a long-shaped octagon; SS. Anne and Agnes, a rectangular plan with four piers and a domed square in each corner; St. Martin, Ludgate, with its square spaces and vaulted centre; and so on. All of them are so many separate ideas in plan; the interior detail is often, it must be confessed, not very good, and there is too much of imitation plaster vaulting; but the architectural idea is there. The floral ornament in the dome-panelling of Walbrook is not good, and rather spoils one's pleasure; on the other hand, the benighted custodians of the church have gone far to ruin its proportions by removing the fixed pews and leaving bare the pedestals which were designed to be hidden by the pews, from the line of which the columns arose. It is a piece of architectural vandalism carried out merely in obedience to a ritual habit which did not exist when the church was built. In nearly all the churches there is a fine sense of spaciousness produced by the ample dimensions of the vestibules; and the towers furnish, just as strikingly as the plans, an evidence of the architect's variety of ideas; they are all produced out of the stock-in-trade of the Renaissance building-yard—columns, pilasters, urns, etc., arranged in different grouping and outline; but no two are alike; Wren's resources of effect in this sense seem endless; and the towers, too, seem peculiarly well adapted to be effective on their respective sites; none more so than that thin spire-like erection over St. Martin, Ludgate, obviously intended to contrast with the lines of St. Paul's dome, in combination with which it would be seen from Ludgate Hill.

St. Paul's, as a whole, fully merits the popular admiration, not to say veneration, with which it has generally been regarded; the popular verdict on architecture is for once right in the main, though this is not to say that the building is without faults. It is the general composition of the dome and western towers that make the building; it can hardly be denied that the nave and choir walls, with their mechanical repetition of pilasters in two storeys, are but dull architecture; and the idea put forward by some architects, that the blind wall of the upper storey was erected to give abutment to the dome, is a far-fetched theory of indiscriminating Wren-worship. The beauty of line of the exterior dome goes far, no doubt, to atone for the deceptive structural device by which the stone lantern is apparently carried on it; but it is no argument to say that a Gothic vault is concealed by a timber roof which carries a flêche and that we accept that. A timber and leaded flêche can be and is carried on a timber roof; the stone lantern of St. Paul's is not, and could not be, carried on the timber dome; and most people, when they realise that the dome, on which the lantern appears to stand, could all be removed and the lantern would stand just the same, will be ready to agree that that is not defensible architecture, although it is admirable engineering.

In spite of the fact that Wren's classic architecture is wanting in refinement compared with work of the same period in France, he had the great merit of always preserving dignity even in buildings of a simple and inexpensive kind, and for comparatively humble objects. No better example could be named than Morden College; a charitable institution of which the architecture is at once unpretending and dignified, and far more to the purpose, in this sense, than the would-be picturesque half-timber erections which are now the favourite form of architecture for a similar class of buildings. Both in great and small things, Wren's architecture, if not quite as faultless as some of his admirers pretend, is eminently the architecture of dignified common sense and sound structural ability—two of the best qualities that architectural work can possess.

The Institute Gold Medal Night.

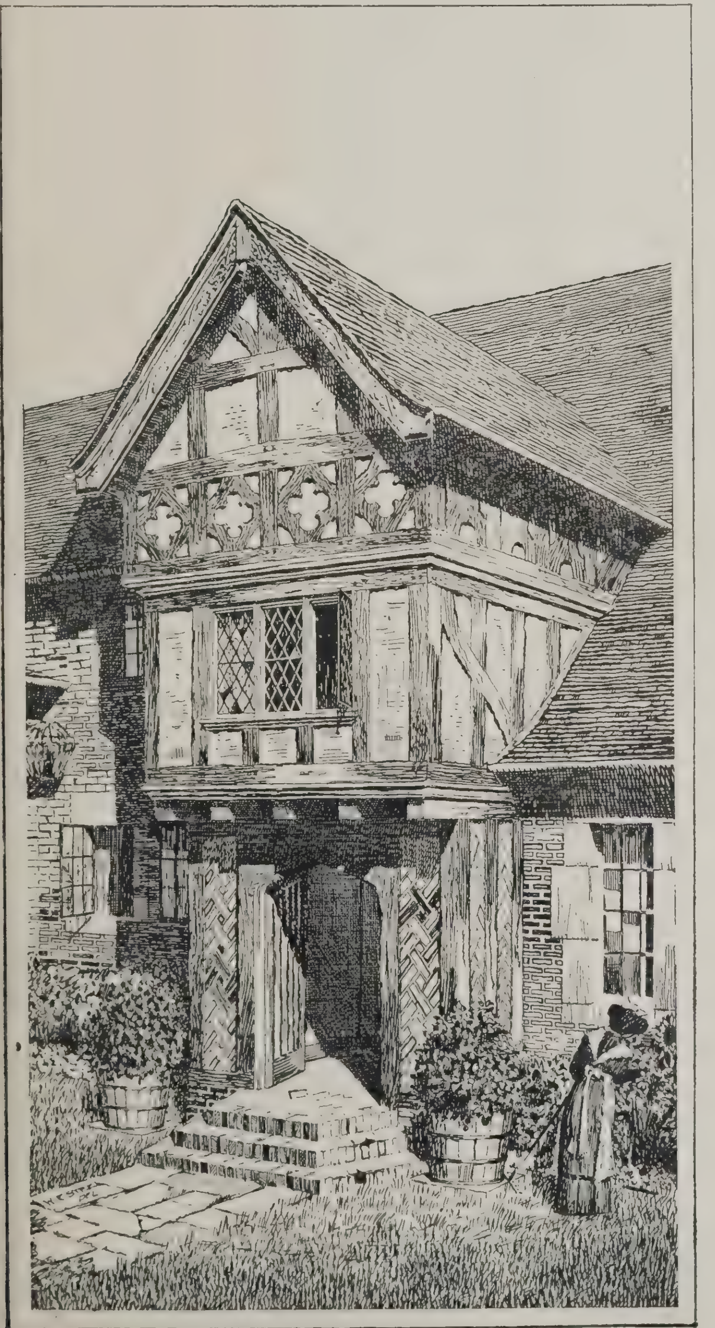
IT is to be regretted on every account that Dr. Dörpfeld was unfortunately prevented from being present in person to receive the Institute Gold Medal last week; the absence of the principal actor always throws something of a damp over the scene, and even those who may not agree with all Dr. Dörpfeld's views would have been glad to make the acquaintance of a very charming personality. We should also have had a reply from Dr. Dörpfeld which would probably have been of some interest, while the gentleman who represented him in the receipt of the medal had apparently nothing to say. Professor Pite gave a well-written and interesting account of Dr. Dörpfeld's acquirements, but we certainly cannot agree with him that Dr. Dörpfeld has "proved" that the actors in the Greek theatre acted on the ground level and not on a stage; he has found arguments which appeal to him, but they are not proofs. There was a large attendance, but our opinion has been all along that the award of the medal at this juncture, at all events, was a mistake, and that sufficient prominence has not been given of late to the claims of those who have produced fine architectural work, the encouragement and reward of which ought to be the principal object in view in awarding the Gold Medal.

Egyptian Antiquities at University College.

THE usual exhibition of the things found by Professor Petrie during last year's excavations is on view at University College, until July 29th. The work done has been chiefly at Hawara, about 50 miles south of Cairo; and the exhibits which seem to be regarded as of most general interest are not ancient Egyptian work, but a series of portraits of the Roman period. We naturally look for objects in the collection connected with architecture, of which there are but few, but one of these is new and significant; this is the lower part of the shaft of a small column, about six inches diameter, which is fluted like a Greek column, with the bottom of the flutes finished off just as they would be in Greek work, though on a very small scale. The column has been partially or wholly coloured red, and must have belonged to some kind of decorative erection. But this column is, according to Professor Petrie, work of the Twelfth Dynasty, otherwise about 3000 B.C., and it is the first time that a fluted column of this pattern has ever been found in ancient Egyptian work. Close beside it, on the same table, is the lower part of a rather large column (same approximate date) of the sixteen-sided type, which, on a much larger scale, we are familiar with in drawings and photographs of the Beni-hasan cave columns and the much later colonnades of Deir-el-Bahari, which are dated about 1500 B.C. The interesting point, however, is that while at Deir-el-Bahari the facets of the column are flat, in the sixteen-sided column at University College, so many centuries older, the facets are slightly but distinctly hollowed, giving an early suggestion of what afterwards became the Doric fluting. One cannot assert that there is any connection between the two; but it is evident that in any Egyptian excavation one may come on a single object which suggests a doubt in regard to received ideas as to the history of architectural forms. This fragment of a column has been painted black, with the lower portion left white, and it is the first example of the sixteen-sided Egyptian column which has been found in a detached form, and brought to England. In another part of the room are a capital and a piece of running ornament, of a crude Byzantine type, which formed part of a church of the early sixth century A.D. These are the only objects in the collection which are of specially architectural type, though there is plenty of interest in the shape of antiquities of other classes—vases, personal ornaments, etc.

The Hellenic Society.

ON Tuesday last week this Society held its annual meeting, at the rooms of the Society of Antiquaries; a meeting at which the present able and esteemed President, Professor Percy Gardner, took his farewell of the Society in this capacity, having fulfilled his five years' term of office, and read his address from the chair. Sir Arthur Evans has been elected as his successor. In his address Professor Gardner said that while the Society up to the present date had had a course of expansion and increasing usefulness, the outlook was less promising now; in all European countries the attachment to Hellenic studies was diminishing rather than advancing. If this is the case, no doubt it is mainly owing to the increasingly utilitarian spirit of the day, and the idea that Greek studies do not bear much on the actual work of life. Professor Gardner would probably admit that; but he urged that the value of Greek archæology was thereby increased, as a form of culture necessary to keep us from relapsing into a kind of intellectual barbarism. He remarked also that among their own ranks of late there had been rather too great a tendency to bestow attention on the early origins of Greek art, which were no doubt of great interest historically; but what we needed rather was to study the spirit and the remains of Greek art of the best period. To make ancient Greek live again, or to keep alive its spirit, should be the main object of the Society, for Greek art and literature stood for what was simple, natural, and healthy.



DESIGN FOR AN ENTRANCE PORCH. REGINALD T. LONGDEN, ARCHITECT.

The Island of Comacina.

COMACINA, the one island in the lake of Como, is offered for sale under circumstances which seem to demand the immediate attention of all who would wish to see a beautiful spot, full of historic associations and containing remains of considerable archæological value, saved from being vulgarised into a commonplace pleasure resort. The descriptive pamphlet circulated by the agents for the sale is one of the oddest pieces of unconscious irony that we have come across. The description of the beauty of the island is quite poetic, and we are also told how it contains relics of great archæological importance, of the Fifth, Seventh, Eighth, and Tenth Centuries. On the following page comes the proposal that a syndicate might be formed for acquiring the island for a casino or kursaal, "and various other attractions"; and how the wooded part of the island "can easily be converted into a public park, in the centre of which would stand the casino." That is to say, to deprive the place of all that now makes it beautiful and interesting, without regard to its history and its archæological remains. If it is to be sold, it is to be hoped that it may at all events be purchased by some private person who would value it for what it is, or that a syndicate, if any, might be formed to purchase it with that object, and to save it from degradation into a casino with "various other attractions."

Great Britain's Town Planning Advantage.

A PARTY of a hundred American citizens have come to England to study business methods and civic administration. They arrived at Liverpool on the Cunard liner "Carmania," and after motoring round the city went over to see Sir W. H. Lever and inspect his garden city at Port Sunlight. Later the party visited Chester. The visitors intend to study commercial, industrial, and civic questions in England and on the Continent. Among them is Mr. John Nolen, a well-known American city-planner. In conversation with a Liverpool correspondent of the "Daily News," Mr. Nolen said the Americans were very keen on city planning, but most of the work carried on in this connection was the result of voluntary effort. "In this matter," he said, "we are behind Great Britain, in that we have no law so satisfactory as your Housing and Town Planning Act. We have no general authority which deals with the subject. Each State controls itself, and grants charters to the cities, so that we have no body corresponding to your Local Government Board. This is a great drawback to us. Our best town-planning work has been done by voluntary associations—mostly business men's organisations. They have prepared a great many plans for the improvement of cities, and have paid particular attention to groups of public buildings around parks and open spaces." The visit has been arranged by the Boston Chamber of Commerce, and the Americans, after calling at Manchester, and then visiting London for a week, were to see most of the important towns in France, Belgium, Germany, Austria, and Italy.

Oxford Architecture.

OXFORD criticism, in spite of its blandly philosophical tone and expression, is nearly always strongly controversial, usually raising more issues than it settles. In a city so rich in noble buildings, it is natural that a nice taste in architecture should be cultivated—indeed, the only wonder is that it is not in more numerous instances imbibed from the very atmosphere—and Oxford men have ever been wont to deliver themselves with freedom and felicity upon this fruitful theme. The new buildings of Oriel and Brasenose could not have been expected to escape the exercise of this exuberant faculty. As soon as the scaffolding was removed, the critics began to unburthen themselves of their surcharge of æsthetic wisdom. One of the most reasonable of them (which is perhaps not saying very much for him), writing in the "Times," expresses the opinion that the new Brasenose wing, which is a completion of the façade which Mr. Jackson began twenty years ago, "has made the defects of that façade still more evident, since it emphasizes the want of relation between the ornament of the tower and the ornament of the rest of the building." He admits, however, that the whole is simple in plan and satisfactory in its main proportions and outlines, and that the ornament is "designed and executed with some spirit," although "it seems to have been imposed upon the building in arbitrary patches because the architect felt that a façade upon the High ought to be richly ornamented." The critic feels that "in a building of this kind, consisting of a tower and two wings, the ornament should be mainly concentrated upon the tower, as in many old examples," whereas the tower gives the critic the impression that it was loaded with ornament in order that "it should not look mean and bare in contrast with their greater richness." It therefore appears as if the several parts of the building were rather in competition in which the tower comes off badly. Of the Oriel building, the first remark is that it is set at an ugly angle to the buildings next to it, which is not the fault of the architect (Mr. Champneys), but of the civic authorities, whom one had always hitherto innocently supposed to be, in such matters, in bondage to the University Senate. Mr. Champneys, it is commented, "has tried to imitate the quaintness of that peculiarly Oxford style of architecture in which Renaissance detail is introduced into buildings still entirely mediæval." Complaint is made that this quaintness is not spontaneous, and is "a mixture, not of new and old, but of two different kinds of antiquity." The mood is not interesting now that it has ceased to be real. Whence the critic derives the following moral: "Architecture, which is coming to life again in London, is still so much oppressed by the past in Oxford that it remains a dead language, or rather a mixture of dead dialects. It is more scholarly than it used to be, and more spirited in its details; but it will not be a living art until architects give up all attempt to make the new like the old, and express the tradition of the place in their own way." There is perhaps more force in the general proposition than felicity in its present application. The architect upon whom falls the signal honour of designing additions to the building of Oxford University may well be excused if he falls under the spell of an influence that has been sufficiently powerful to determine the character of college buildings as far away as certain remote townships of the United States. Therefore, the comparison between London and Oxford is hardly fair. London's traditions are many and varied, and its denizens do not cling to the "dead languages" with the persistency of Oxford, where they are reverently regarded as the basis of all correct expression, humane or architectural. The architect who, chosen for his scholarly sympathy with venerated traditions, should in act straightway depart from them in an audacious endeavour to impress his own individuality on Oxford University would be promptly denounced for betrayal of his trust; and then perhaps some linguistic amateur of architecture would complain that he had forsaken the dignity of the dead languages and expressed himself in Esperanto! Either way you have him; nor could he hope to escape censure if he ventured on the vernacular, or compromised on pseudo-classic or Neo-Grec. It is impossible to please these Oxford pundits; and indeed, to succeed in striking them all dumb with admiration would be a deprivation to the listening world.

Builders and the Insurance Bill.

AS we anticipated, the representatives of employing builders have been prompt to wait on Mr. Lloyd George in order to lay before him their views with respect to the National Insurance Bill. To do him justice, it must be acknowledged that Mr. Lloyd George is very accessible to deputations, although, judging from past experience, it seems pretty clear that this readiness to receive them is largely based on the assumption that it is easy to "talk them round." Whether or not the deputation of representatives of building trades employers which waited on the Chancellor last Friday became submissive to the hypnotic spell of his undoubtedly charming personality remains to be seen, for the proceedings have not yet received publicity. On the other hand, what occurred at the meeting on the same day with the deputation representing the Associated Chambers of Commerce was reported, and from this it appears that the Chambers went over pretty much the same ground that the building employers might be expected to cover. Sir Algernon Firth, who was chief spokesman for the Chambers, dropping the somewhat curious remark that "as regarded the unemployment part of the Bill, there was an impression abroad that that part of the Bill was to be dropped for the present," was promptly assured by the Chancellor that "there was absolutely no intention of that kind, and he could not imagine how such an impression could have got abroad." Sir A. Firth, like the builders, could not understand why the employer should contribute at all. The benefit would be to the workers and to the general community. Employers were told that they would get better workmen; but many Chambers thought that there would be a great deal more machinery standing idle through absence of workers owing to imaginary illness. Mr. Lloyd George, in the course of his reply, opposed several reasons against the request for time to consider the Bill. The delay would, he said, injure many interests—those of the friendly societies and trades unions, whose recruiting and other operations must come almost to a standstill until the issue was known, and those of doctors who in the meantime were unable to exchange or sell their practices or to arrange for official appointments. As to malingering, his main argument was that while, under the Liability and Compensation Acts, the workman malingered at the expense of his employer, under the new Bill he would malinger at his own expense—an antithetical statement that clearly has in it only the merest fragment of truth. As to Clause 51, he said it was a gross misrepresentation to state that a sick man would be allowed his rent for six months. As the clause stood—and he was prepared to modify it—there was simply the provision that during the time a man was receiving sickness benefit—three months, not six months—his goods could not be distrained. The intention was that this clause should be only applicable to cases where it was clear that ejectment would imperil life. That is no doubt a very benevolent intention; but it is not the intention, but the realisation, which ultimately matters, and those who are less trustful than Mr. Lloyd George, because they have had a good deal of painful experience of the wily ways of the malingerer, will be more disposed to agree with the view of Sir Richard Temple, who, presiding the same day at a national conference of property owners, said that "the clause turned cottages, tenements, and houses into national free hospitals at the expense of small owners of property, extracted forced irrecoverable loans from small owners to a certain class of tenants, and forced charity out of unfortunate small owners perfectly irrespective of their means." So very many builders are owners of small property that this clause hits them doubly hard. The Bill might give rise, in some cases, to the Gilbertian situation of a builder-cottage-owner compulsorily contributing towards the nourishment of a malingerer who was at the same time swindling him of his rent. Nevertheless, Clause 51 must not be allowed to occupy too much of the builder's attention. He may pretty safely leave it to other hands, and concentrate his forces on opposition to the inequitable—not to say iniquitous—incidence of insurance.

Palatial Potsdam

POTSDAM, which, in the rather desolating fashion of calling one place by the name of another, has been designated "the German Versailles," is, no doubt, in a way, to the German Empire what Versailles used to be to the French. That is to say, it is a place of regal palaces. It lies sixteen miles to the south of Berlin, on the river Havel, and is the seat of government for the Prussian province of Brandenburg, and the favourite summer residence of the Emperor of Germany.

The Royal Palace is at the north end of the bridge which joins Potsdam and the suburb of Teltow. It was built in 1763-9, in Renaissance style, and was the favourite residence of Frederick the Great, of whom many relics are preserved. Voltaire also resided there for several years. It contains the famous "Shell Room" and Marble Hall, and 200 other rooms, and is remarkable for the formidable array of statues on the roof. Potsdam is surrounded by a fringe of royal palaces, parks, and pleasure-grounds. There is the park of Sans Souci, in the French style, with fine fountains and statuary; and the so-called Orangery, of which a view is given, is an extensive building in the Italian style, housing a considerable collection of works of art. It was Frederick William IV.'s country seat. The park also includes the Charlottenhof and a reproduction of a Pompeian villa. The Emperor's summer residence is situated in a park "in the English taste." In a little Pantheon, some exquisite sculptures by Rauch adorn the tomb of Queen Louisa. The Pompeian house, the Marble Palace, the Brandenburg gate, the eighteenth-century Rathaus, some fine churches, the tomb of Frederick the Great in the Garrison Church, and Kiss's statue of Frederick Wilhelm III., are among the many interesting features of Potsdam.

Advisory Architects for the St. Paul's Bridge Scheme.

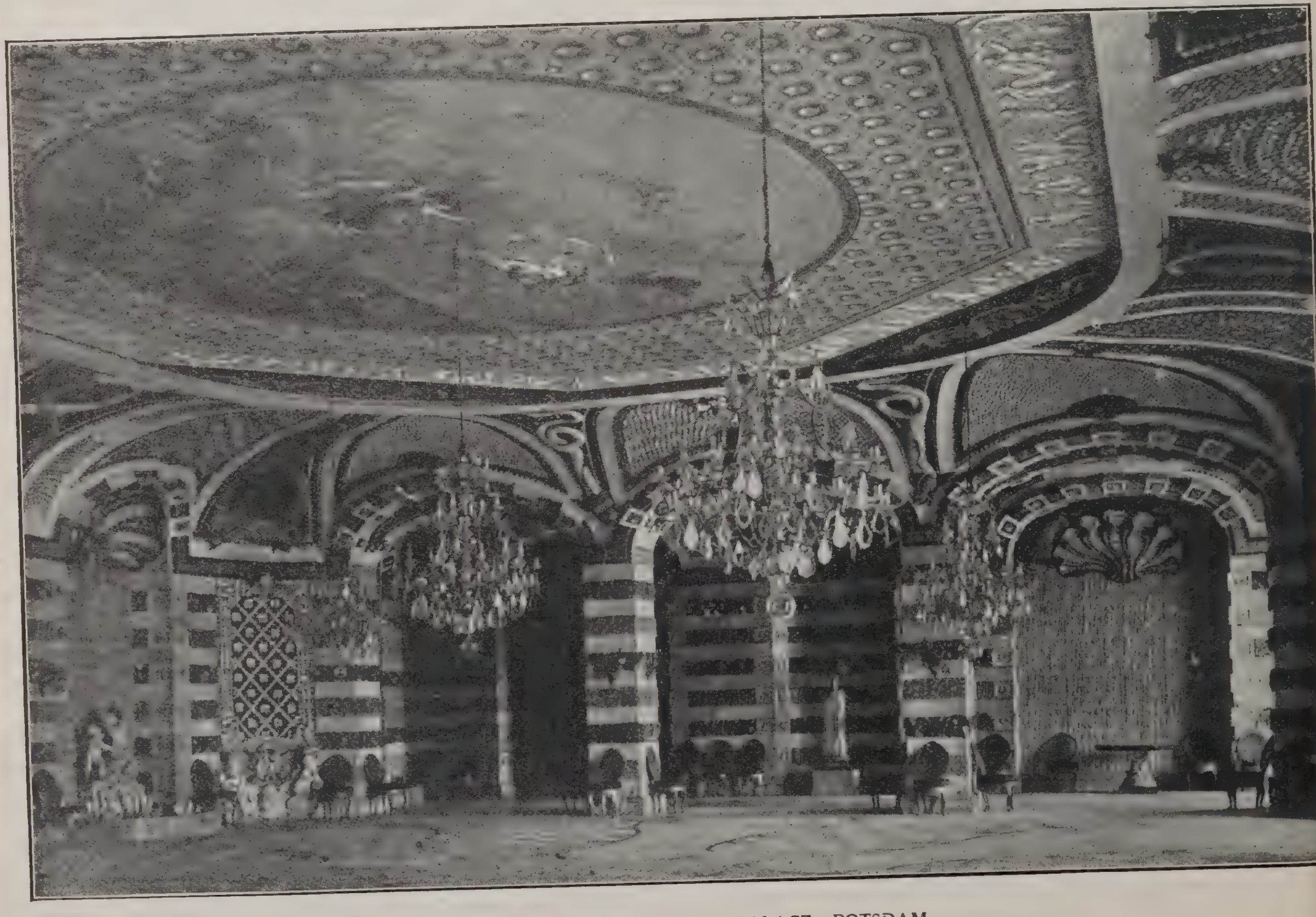
ON Saturday it was announced that "the Bridge House Estates Committee of the Corporation of London have engaged the services of the following architects to advise them in connection with the building of St. Paul's Bridge: Sir Wm. Emerson, F.R.I.B.A., Mr. T. E. Collcutt, F.R.I.B.A., Mr. J. J. Burnett, A.R.S.A., F.R.S.Ed." From the "Morning Post," in which this announcement was apparently first made, the following particulars are quoted, *literatim*, on the responsibility of that paper: "Sir William Emerson has been twice President of the Royal Institute of British Architects. He erected the Bombay Markets and several churches in India; designed the Allahabad University for the Indian Government, the Lucknow Cathedral, and St. Mary's Church, Brighton. In addition, the Clarence Memorial Wing of St. Mary's Hospital and Hamilton House on the Embankment are his work,

THE ORANGERY, POTSDAM

while his design was placed first in the competition for the Liverpool Cathedral. He is responsible for the Victoria Memorial for India in Calcutta. Mr. T. E. Collcutt has also been President of the Institute. He is an honorary member of the Société Centrale d'Architecture de Belgique, and a Corresponding Member of the Société des Artistes Français. He won the Grand Prix for Architecture at the Paris Exhibition of 1889, and the King's Gold Medal of the Institute in 1902. He was responsible for the Imperial Institute, the Savoy Hotel, and Lloyd's Registry of Shipping. Mr. J. J. Burnett is best known in connection with the extension of the British Museum. He was educated at the Ecole des Beaux Arts, Paris, and has travelled in Italy and America. Many churches in Scotland have been erected by him, and he was also the architect of the Glasgow Athenæum and the Head Offices of the Union Bank of Scotland." The eminence of each and all of these gentlemen is unquestionable, and it is without the slightest personal reference to them that we feel impelled to ask upon what principle, or upon whose recommendation, the selection was made. The wording of the announcement seems to suggest that the Bridge House Estates Committee has not yet abandoned the arbitrary and mistaken view that, having control of the necessary funds, it is therefore entitled to deal with the scheme almost as if it were a private enterprise, in which any sort of interference from outside is sheer impertinence. The three architects chosen are fully competent to render most excellent service; but will the Bridge House Estates Committee receive and accept their advice in a duly grateful and sympathetic spirit? In so stupendous an undertaking, the best course would have been to inaugurate a competition, and to get the R.I.B.A. to appoint assessors in the usual way. The Corporation would thus not only have done its duty to the community, but would have rid itself entirely of a burden of responsibility which it is not qualified to sustain, and which was therefore very unwisely assumed.

The Old Palace at Richmond.

AMONGST the old royal residences in London and its neighbourhood few exceed in interest the Old Palace at Richmond-on-Thames. When the present occupant leased it from the Crown some years ago the place had fallen into a very dilapidated condition, but its restoration has been to him a labour of love, and it is now his hope that it may be possible to acquire it on more or less easy terms for Richmond as a museum for the objects of historic interest in which the town abounds. From its erection in the early part of the twelfth century by Henry I. the story of the palace is, a writer in the "Standard" recalls, bound up with that of the queens of England. Here in Richard II.'s time restoration was needed, and for this purpose the King appointed Geoffrey Chaucer his clerk of the works. With Henry VII. it was a favourite residence, and in his honour the town came to be known as Richmond instead of Sheen. Most of the present building dates from this reign, the arches in the entrance hall being fine specimens of the Early Tudor style. Anne of Cleeves, after her divorce, lived here, and the Spanish Lawn, where Mary Tudor walked with her husband during the few happy days of her unfortunate life, is still to be seen. In a little room on the second floor her great sister, Elizabeth, breathed her last. Henrietta Maria rested at Richmond in the Restoration days, and at a still later date George I. sent his daughter-in-law, Caroline of Anspach, to the Old Palace with power to rebuild to and adorn it as she would. The acquisition of the building as a museum for Richmond would ensure its perpetual preservation.



THE MUSIC CHAMBER, NEW PALACE, POTSDAM.

(See "Palatial Potsdam," p. 7.)

PROFESSOR DOERPFELD, ROYAL GOLD MEDALLIST, 1911.

BY PROFESSOR BERESFORD PITE, F.R.I.B.A.

Unfortunately, Professor Doerpfeld, Ph.D., F.S.A., of whom a fine portrait was given in last week's issue, was, on account of illness, unable to be present to receive formally the Royal Gold Medal at the meeting of the R.I.B.A. on June 26th, when the reading of the following letter of apology was sympathetically received:

Professor Doerpfeld Indisposed.

"Berlin.

"DEAR SIR,—I very much regret that yesterday, in consequence of another attack of the complaint from which I suffered last winter, I was obliged to telegraph to you that I should not be able to come to London to receive the Gold Medal in person. I had made all my preparations to to start for England to-morrow, but now, by my doctor's orders, I am compelled to go to Carlsbad immediately, and so must unfortunately give up my proposed journey to England.

"I must ask you to convey to the Royal Institute of British Architects and its President my very sincere regret that I cannot be in London on the 26th to receive the Gold Medal personally, and at the same time to express my heartiest thanks to the Institute for the very high honour they are doing me by bestowing this Medal upon me.

"My one aim and object all the time I have worked in Greece—now some thirty-four years—has been to emulate the late F. C. Penrose, and to further the interests of Greek architecture as he did. It was always a very great pleasure to me, at the time when he was Director of the British School at Athens, to work together with this Nestor of Greek architects at the buildings of Athens; and, as I am sure you will understand, it is the greatest pleasure to me now to receive the same Gold Medal that was presented to Penrose in recognition of his important life's work.

"The distinction conferred upon me will be an incentive to me for the rest of my life to carry on Penrose's principles. I shall be happy indeed if the condition of my health will allow me to work for some time longer at the investigation of Greek architecture and its history.

"I propose to present a work on the original plan of the Erechtheum to the Royal Institute of British Architects in which F. C. Penrose was formerly greatly interested.

"With renewed thanks and deepest gratitude,

"Yours very faithfully,
"WILHELM DOERPFELD."

Professor Pite's Eloge.

Professor Beresford Pite's eulogium on the distinguished medallist was as follows:

Wilhelm Doerpfeld, architect, Doctor of Philosophy and of Laws, was born at Barmen on December 26th, 1853; he was educated at the Gymnasium of Barmen and at the celebrated Technical High School at Berlin. At the age of twenty-four he was appointed architect to the German Institute of Archæology at Athens, and thence to the excavations at Olympia, undertaken by that Institute under the direction of Ernest Curtis; since then for wellnigh forty years his life-work has concentrated itself upon Grecian life and architecture. His enthusiastic zeal, strengthened by a glowing scholarship, has developed and advanced the scientific excavations of ancient sites; and the elucidation, by classification of the constantly accumulating discoveries, has made him not only a great discoverer but an inspiring teacher; while his boldness and certainty of vision, in re-creating the hitherto almost unrevealed world of pre-Hellenic thought expressed in building facts, constitutes a forcible claim for his recognition as a great imaginative constructor. For this work as a discoverer, as an elucidator, and as a reconstructor of the foundations upon which the glories of Greek architecture were achieved, British architects to-day offer again their recognition and applause to their German confrère, the great successor of Schliemann, upon whom the Royal Gold Medal for architecture was conferred twenty-six years ago.

Doerpfeld's Work.

Dr. Doerpfeld's work may be broadly described as that of manifesting to the world for the first time the true import of the almost magical discoveries of his friend and master, that true amateur of Greek archæology, Heinrich Schliemann. The dawning certainty that a Mycenæan architecture underlay, as a foundation, the development of that ultimate architecture of Greece, which for a whole century Europe has accepted as the acme of intellectual expression in building, is due more to Doerpfeld than to any other man. The marvels of Gnossos so learnedly discerned, and then discovered, by Sir Arthur Evans, whom we pause to congratulate [on his knighthood], with their relation to a still older Miosian age, fall naturally into place in the progress of the intensive revelation of the core of Levantine culture, after the establishment by Doerpfeld of the relation of the art of the mainland at Mycenæ to that which went before and which followed after.

Untiring patience in research, insight into purposes and conditions, and the architectural instinct of a scholarly imagination, combine in Doerpfeld's work to fascinate the modern practical architect.

We may wonder, and perchance tremble at the prospect, even in the dimmest future, of the unravelling, by such another investigator, of the motives and simulations involved in the process which we call design. In deprecation of the searchlight of the future we to-night offer appreciation to the revealer of the long-past. The living to-day has seen the dead yesterday arise, and cannot but marvel and be instructed.

Doerpfeld's work began, as we have said, at Olympia under Curtius, and was afterwards continued as assistant to Schliemann at Tiryns and Troy. After Schliemann's death in 1890 he was in full charge of the excavations, and there he watched for, discovered and elucidated the evidences of that pre-literary life of Greece to which Homer leads back, and which he has pictured in his illuminated history. In 1887 Doerpfeld was appointed Secretary of the German Archæological Institute at Athens, and later on its Director, and from his home and work in that city he has shed light and stimulating exposition upon the problems of that Acropolis, more modern by a millennium than the original Troy. Of late, by the direction of the German Emperor, he has been placed in charge of the excavations at Barizta, in Corfu.

Excavations at Olympia.

The architectural drawings bearing the name of Wilhelm Doerpfeld, in the great and fascinating volumes recording the excavations and discoveries at Olympia, are evidence of his possession of that clearness of method and completely scientific draughtsmanship which we associate with his friend and colleague Francis Cranmer Penrose. The simple sections elucidating the strata of buried cities upon the site of Troy are also models of directly explanatory diagrams. The fruitful effects of the excavations and discoveries at Olympia, at Tiryns, and at Troy, upon our knowledge of the pre-Homeric world, and consequently upon the whole setting of early Greek History, might be dwelt upon, but their general aspect is not the especial ground of the bestowal of the Royal Gold Medal for Architecture. We must pass from the general view with the reflection that the critic of literary history most to be respected and feared is he who wields not the pen of scholarship but the pick of exploration—

> "When time is old, and hath forgot itself,
> When water drops have worn the stones
> of Troy,
> And blind oblivion swallowed cities up,
> And mighty states characterless are
> grated
> To dusty nothing."

Scholarly Elucidations.

Among the suggestive architectural results that have followed from Doerpfeld's discoveries and insight may be instanced the recognition, in the recovered complete plan of the Mycenæan Palace at Tiryns, of the Megaron or Men's Hall, with its portico in antis as the original type of the cella of the Grecian temple, which ever afterwards maintained its sacro-sanctity of plan, also that the propylea of the house went before that of the Acropolis. Doerpfeld saw that the foundation walls of the temples, built of rubble, were, on account of their breadth, a manifest preparation for a superstructure of weak, unburnt brick, these cella walls being protected of necessity by a verandah or peristyle; that the stone bases of the columns were so spaced that timber architraves must have bridged them; that terra-cotta tiles covered them; that the bases of the soft brick walls were produced vertically against the rain splash for a short space with stone plinths, a purpose and meaning of which the plinths of the modern architect are entirely deprived though their presence is dimly and may be sub-consciously known to be appropriate, and that the timber framings employed to strengthen the angles of such walls where the ceiling beams concentrated weight at the angles as well as at the jambs of the door, are the forerunners of the decorative stone anta pilasters and architraves. It is universally recognised that what Schliemann, with an almost miraculous instinct, lighted upon of ancient Troy, Doerpfeld, by deliberate scholarship, has elucidated amid the upheavals of the first excavations. He has recognised in all nine strata, and in the mound of Hissarlik in Asia defined in the sixth stratum a city similar in constructional epoch and style to that of Mycenæ and Tiryns in Europe at their acme. No certainty in these important eras of Trojan building was possible until Doerpfeld's genius systematised the relations of the foundations and remains, and he has had his reward in revealing the Mycenæan architecture of the pre-Homeric age. His great book on this site is a monument of clearness, and its strength has not yet been weakened by any serious criticism.

The German Institution at Athens.

Doerpfeld has been for many years the head of the German Archæological Institute at Athens, the recognised doyen of the five foreign schools of archæology, and an unrivalled lecturer and exponent of Athenian topography. To say that he is the greatest living authority upon all that concerns the Acropolis is to include a wide ground of reputation, for Athens has become again in our day a centre of learning; the ancient home of art and letters has attracted to herself from the New as well from the Old World brilliant and ardent scholars in both their youth and prime. To those near, as well as to us who are farther off, the hidden mysteries of the Acropolis rock have become still more vital by the investigations and suggestive teaching of Doerpfeld. The Erechtheum as always is a problem not yet solved, but Doerpfeld's pregnant suggestion that the Porch of the Maidens and the Northern Portico may be the designed centres of incomplete elevations is provokingly just, and architecturally spontaneous; and when he indicates how the Greek architects were attended by such hindrances from political and civic troubles as of late have even with us provoked Parliamentary interference, he touches a note which proves him to be not only an archæologist but a seer. Doerpfeld's courageous opinion, in spite of the obstructive presence of those six lovely maidens, that the ancient Athena Temple, with its Periclean Treasury, was not removed, but maintained after the Persian wars, alongside the first Parthenon, if not also of the second, is another vivid instance of the inextinguishable interest of the Acropolis.

The Greek Theatre.

Such a cicerone as this, fully elaborating technical arguments with a patient enthusiasm and quiet humour, has been a privilege of which, through his generosity, many English students have tasted freely, and for which we now make acknowledgment. Doerpfeld's Athenian work has included the proposition which Penrose's excavations afterwards justified, that the temple of Jupiter Olympius was octastyle, and had a large practical development in excavations on an extensive scale between the N.W. foot of the Acropolis and the Pnyx, tracing the ancient water supply and laying bare a thickly built-over quarter of the city. His remarkable work on the Greek Theatre should be mentioned, and his interesting discovery that the original stage was on the ground level.

When Penrose, already venerable, undertook the first directorship of the British School at Athens, Doerpfeld afforded him unwearied assistance and support, and this kindly attitude has been maintained with all the subsequent Directors of our School.

Famous Royal Medallists.

Upon the Roll of those honoured by the Royal Gold Medal is found the first, in 1848, the great name of Cockerell, great as architect, explorer, and archæologist, followed by Canina, in 1849, of Roman fame; Donaldson, in 1851; Hittorf, of Sicilian fame, in 1855; Pennethorne, alike architect and Grecian archæologist, in 1865; Texier, the Byzantine companion of our late colleague Pullan, in 1867; Layard, of Nineveh, in 1868; Lepsius, for Egyptian research, in the following year; and the Marquis de Vogüé, great for his stimulating Syrian work, in 1879; alas only lately gone from us, Penrose himself, in 1883; Doerpfeld's companion and leader Schliemann, in 1889; Lanciani, of Rome, in 1900; Choissy, in 1904; and Evans, in 1909—all archæologists great in word and deed, to whom, by favour of His Most Gracious Majesty King George V., the patron of this Royal Institute of British Architects, is added to-day the name of Wilhelm Doerpfeld, with the sincere gratitude of his English confrères for the architectural stimulus that his discoveries have afforded, and for the brilliant expositions by which his genius has made the hidden embodiments of ancient intellect retell the story of their birth for our instruction.

OUR PLATE.

In another part of the present issue there is a note on the new buildings at Brasenose and Oriel, of which Mr. Jackson and Mr. Champneys are respectively the architects. Their work is there admitted to be "spirited and scholarly," and certainly no less can be said of the new building at Magdalen, by Messrs. Bodley and Garner, of which an interesting detail—showing chiefly the fine two-storey oriel window—forms the subject of our centre plate.

COMPETITIONS.

Manchester New Library and Art Gallery.

As with most, if not all, important competitions, the (preliminary) awards at Manchester have given rise to considerable discussion. It is complained that in some of the ten designs selected for the final competition, all the conditions have not been strictly observed. On the whole, however, it is difficult not to agree with the observation of "Another Manchester Practitioner," who maintains that "in a preliminary competition it is almost impossible to keep the area of the buildings and the cubic space down within absolutely defined limits. What is required from the assessor," he continues, "is not, in the first instance, an award based on finely drawn conditions as to cubic spaces, etc., but a decision on broad lines as to which ten of the schemes sent in give the greatest promise of a satisfactory scheme when fully worked out." He adds that "all architects with any experience at all of competitions know that it is very rarely indeed that a plan sent in in competition is carried out exactly; it is always remodelled, curtailed here, amplified there, the broad lines on which it was conceived being alone retained." This seems to be a very rational view.

LIST OF COMPETITIONS OPEN.

JULY 7. SECONDARY SCHOOL FOR GIRLS, NORTHAMPTON.—The Northampton Boro' Education Committee invite architects practising in the borough or county of Northampton to submit, on the 7th of July next, plans for a secondary school for girls, to be erected in St. George's Avenue, Northampton. Particulars from Stewart Beattie, secretary, Education Offices, 4, St. Giles Street, Northampton.

JULY 31. ELEMENTARY SCHOOL, LOWESTOFT.—Premiums of twenty, ten, and five guineas are offered by Lowestoft Education Committee for designs for an elementary school for 500 boys, to be erected at Roman Hill. Particulars on payment of 10s. 6d. Applications to be received not later than June 24. Designs to be sent by July 31. Address, R. Beattie Nicholson, Town Clerk, Town Hall, Lowestoft.

JULY 31. PARLIAMENT BUILDINGS, WELLINGTON, NEW ZEALAND.—Premiums, £1,000, £500, £300, and £200. Particulars, Minister of Public Works, Wellington, New Zealand.

JULY 31. DESIGN FOR AN IDEAL COUNTRY HOUSE.—The "Daily Mail" offers a prize of £100 for a design for a country house to cost £900 to £1,100. Architectural assessors, Mr. E. C. T. Monson, F.R.I.B.A., M.S.A., and Mr. Edwin J. Sadgrove, F.R.I.B.A., M.S.A. Particulars from Carmelite House, E.C.

AUGUST 8. LAY-OUT OF BUILDING SITES, EGREMONT.—The Egremont Urban District Council offer two prizes of £40 and £10 respectively for a scheme to lay out, under the Housing of the Working Classes Act, 1890, building sites at Egremont and Bigrigg. Map of the sites, showing position and depth of drainage, water, and gas pipes, will be deposited for inspection at the Town Hall, Egremont. The Egremont site consists of 1 acre 1 rood 16 poles, and the Bigrigg site 3 acres 1 rood 28 poles. Further information may be obtained of the Surveyor, Town Hall, Egremont.

AUGUST 15. MONUMENT AT BERNE, to celebrate the foundation of the International Telegraph Union. Copies of the conditions can be seen at the R.I.B.A. Library, 9, Conduit Street, W. Particulars in our issue of January 11th.

SEPTEMBER 12-25. COURTS OF JUSTICE, ATHENS.—Competition open to foreign architects. Cost of building not to exceed £160,000. First and second premiums, £800 and £320. Plans, estimated costs and fee of £8 required. Particulars to be seen at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., and in the library of the R.I.B.A.

SEPTEMBER 16. LIBRARY AND ART GALLERIES, MANCHESTER.—Limited to the ten selected competitors in the first competition.

NO DATE.—NEW BAPTIST CHURCH, NOTTINGHAM.—Nottingham architects wishing to enter a limited competition for plans of a new Baptist church and premises are requested to communicate with Messrs. Rorke and Jackson, solicitors, King Street, Nottingham.

EXHIBITION OF MODELLING AND DESIGN.

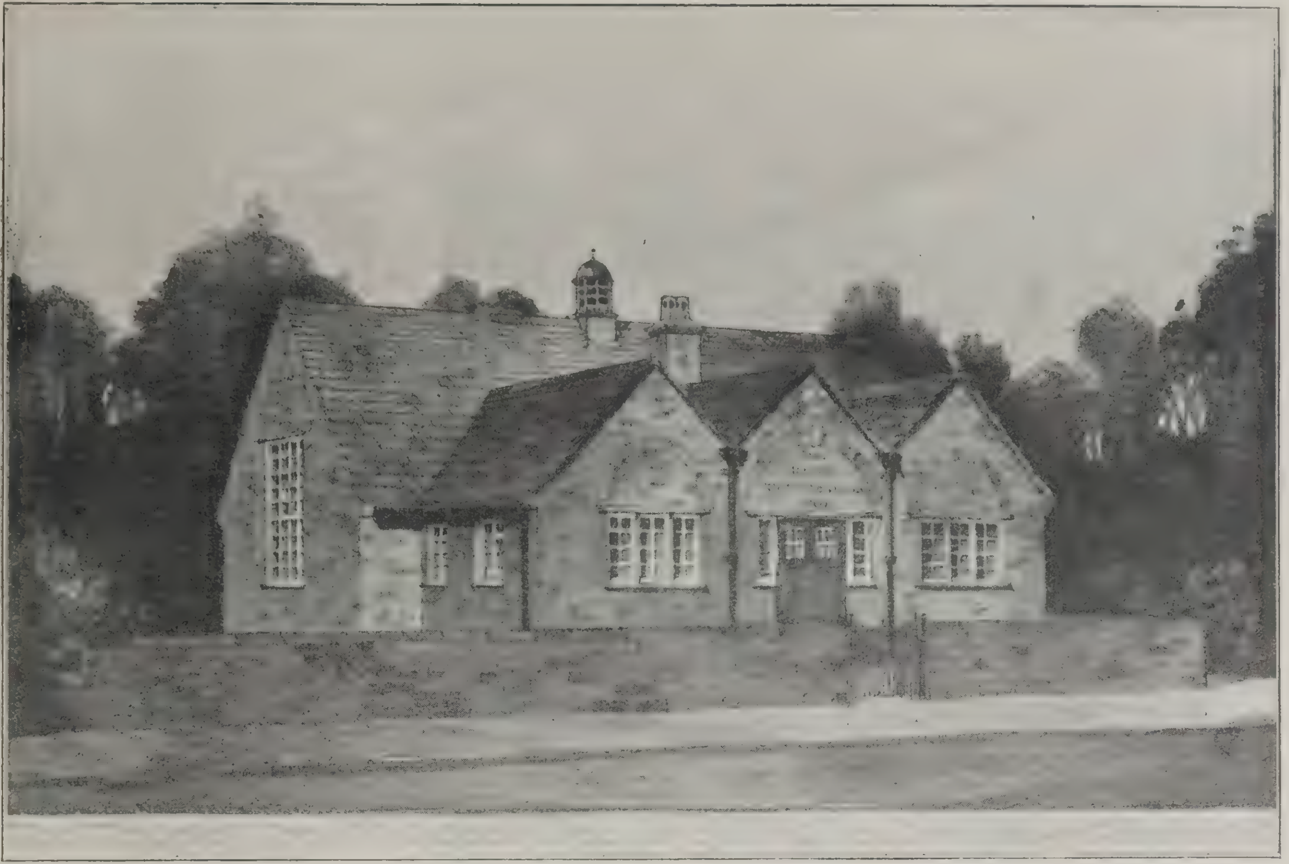
An exhibition of modellings and designs was held last week at the Albert Mansion studios of Messrs. H. W. Cashmore and Co., 96, Victoria Street, Westminster. Various examples of modelling were on view, some being in the interesting stage of unfinished suggestions awaiting the approval of the clients to whom they had been prepared. Others were finished models, from which the plaster patterns were about to be taken. Among these latter was a charming fountain design representing the figure of a boy, which is intended to form part of an important scheme of garden decoration prepared by a well-known London architect.

There was also on exhibition the sketch model of a large fountain to be executed in bronze; this, when finished, will be about 14 ft. high. The small scale model, measuring about 18 ins. in height over all, is to be finished and cast in silver. The commission, we understand, emanates from South America.

In addition to the figure work, of which some clever examples in bronze and lead were on view, there were many interesting pieces of metal work of a minor character, and also designs in plaster-work, woodcarving, and panelling. The plaster-work was by Mr. G. P. Bankart, for whom Mr. Cashmore holds the London agency.

Cartoons of some massive metal gates, which have been executed for a large building on the Embankment, were also exhibited. These studios, we understand, have recently been visited by many London architects, who have expressed pleasure at the accessibility of the work, and at the facilities offered for their attendance during the execution of a commission.

Messrs. Hubbard and Moore, FF. R.I.B.A., announce that their partnership terminated on June 30th, and that both Mr. Hubbard and Mr. Moore will continue to practise from their present address—112, Fenchurch Street, E.C.



ENQUIRIES ANSWERED.

N.B.—Enquiries on the following subjects are not desired :—

(1) Enquiries about buildings to measure in particular towns and districts.

(2) Enquiries embodying questions which have been set in examination papers.

(3) Enquiries which ask for or require the preparation of special designs as part of the answer.

Safe Load of Floor.

R. T. R. (Coatbridge) writes : "Please say, from the following particulars, what safe load a concrete and steel factory floor will take per sq. ft. clear of its own dead weight. 5 in. by 3 in. steel **H**-joists are placed at 30 in. centres, in concrete 8 in. thick. The span is 30 ft."

—We have the general formula : B (bending moment)=Sm (section modulus) ×f (safe stress). Now the Sm of a 5 in. by 3in. joist is 5.45, and if we take $f=7\frac{1}{2}$ tons, we see that the floor can safely resist a bending moment of

$$5.45 \times 7.5 = 40.875 \text{ in. tons.}$$

The joists, being continuous over one support, have their maximum bending moment, a negative one, over the support when both spans are loaded.

Calling $w_1 =$ the dead load in lbs. per inch run, and

$w_2 =$ the live load in lbs. per inch run. we have

$$B = \frac{(w_1 + w_2)\, l^2}{8.}$$

Now $w_1 = 2\frac{1}{2} \times \frac{8}{12} \times 150 \div 12 = 10{\cdot}416$ lbs. in run and $l = 13 \times 12 = 156$ inches.

Therefore $(10{\cdot}416 + w_2)\,\frac{156 \times 156}{8} = 40{\cdot}875 \times 2240$ in. lbs.

from which

$$w_2 = \frac{40.875 \times 2240 \times 8}{156 \times 156} - 10{\cdot}416.$$

$$= 19.684 \text{ lbs. per inch run.}$$

We see then that the floor will sustain a super load of

$$\frac{19.684 \times 12}{2.5} = 134.5 \text{ lbs. per ft. super.}$$

Book on School Planning.

N. J. (Sidmouth) writes : "Please recommend an inexpensive book on school planning."

—"School Planning at Home and Abroad," by William H. Webb, published at one shilling net by the Sanitary Publishing Co., Ltd., 5, Fetter Lane, Fleet Street, E.C., would probably meet our correspondent's requirements. The book is a résumé of English and Continental practice.

Composition of Paint.

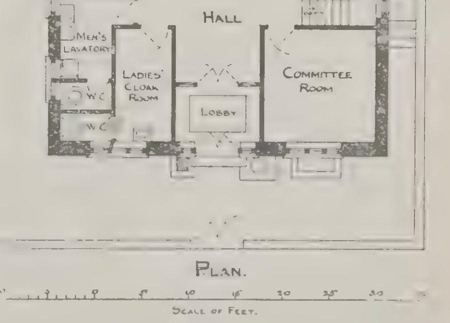
R. (Newcastle).—Your enquiries on this subject are answered in the article on "Specifications for Paint," which appears the journal of June 28.

THE TEMPEST CONSTITUTIONAL CLUB, DRIGHLINGTON, YORKS.

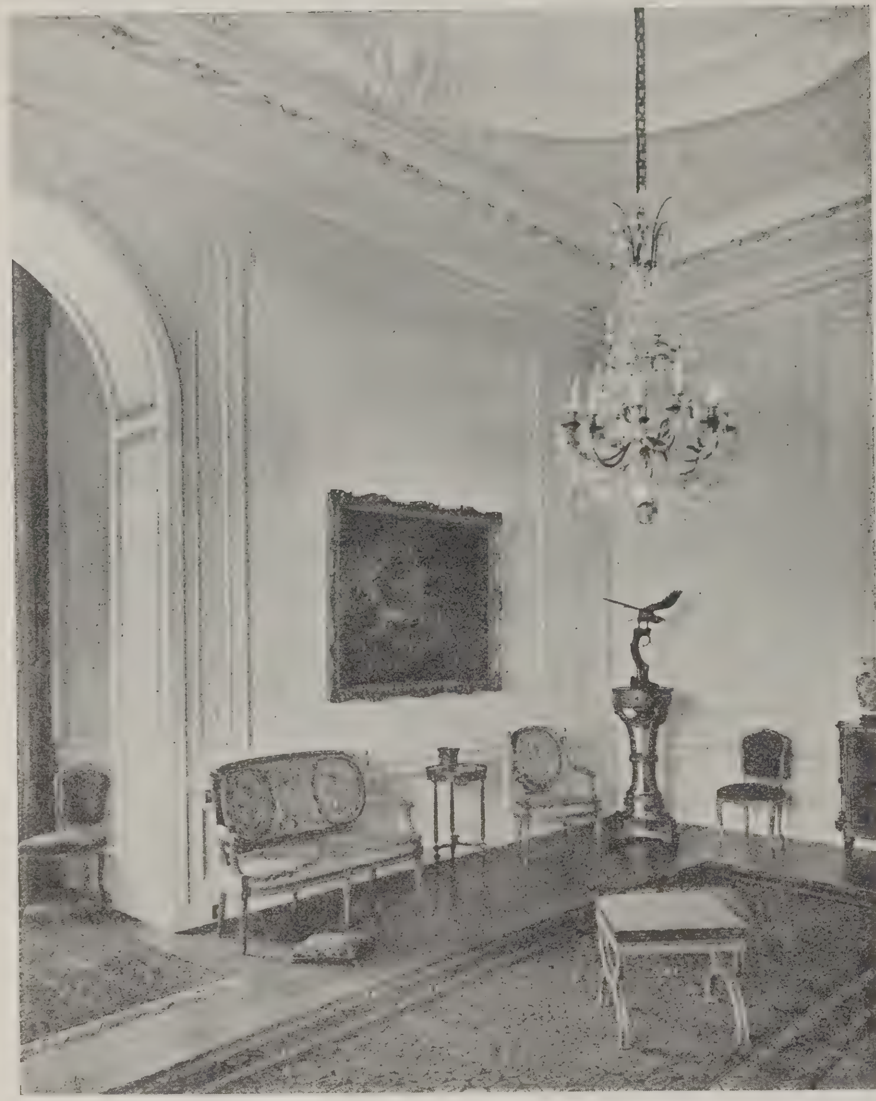
This village club was built in 1909-10, chiefly at the cost of Mrs. Tempest, of Tong Hall, in the adjoining parish of Tong, near Bradford, as a memorial to her late brother, Sir Tristram Tempest, Bart. It is of Idle stone, of warm and varied colour, in random courses, and the roof is covered with local stone slates. The joinery is of Canary whitewood left in its natural condition, inside the building, and painted green outside. The floors are laid with narrow boards, secret-nailed, so as to be suitable for dancing, and the hall and cloak-rooms, etc., are paved with terrazzo. The plan shows the arrangement of the ground floor, the club-room and billiard-room being separated by a folding partition, thereby forming one large room for meetings, etc., when required. In the basement there is a scullery, with a gas stove and large copper, for preparing tea and other refreshments, also a heating chamber, the whole of the building being warmed by hot water on the low-pressure system.

The work was carried out from the designs and under the superintendence of Mr. Louis Ambler, F.R.I.B.A., of London, by the following contractors, viz., Messrs. S. and D. Thornton, Drighlington, masons; Messrs. Henry Waterhouse and Sons, Tong Street, joiners; Messrs. Thomas Nelson and Son, Bradford, slaters; Mr. Alfred Cooper, Drighlington, plumber; Messrs. John Iredale and Son, Birstall, plasterers; Mr. Tom Batty, Drighlington, painter; Messrs. A. Grindrod and Son. Sheffield, heating engineers; The British Flooring Co., London, terrazzo paviors; Messrs. Peace and Norquoy, folding partition makers; and Messrs. Humphries, Jackson and Ambler, Manchester, gas fitting makers.

The total cost of the building was about £1,200, exclusive of laying out the grounds and forming a full size bowling green and tennis lawns.



Plan.



The interior decoration of Wemyss Hall is carried out with a certain subdued richness of effect. The ceiling of this room was modelled *in situ* by Messrs. Beattie, of Edinburgh.

DETAIL OF DRAWING ROOM, WEMYSS HALL, CUPAR, FIFE.
R. S. LORIMER, A.R.S.A., ARCHITECT.

NEWS ITEMS.

Changes of Address

Mr. A. J. Clifford Ewen, Licentiate R.I.B.A., announces that as from June 21st his address will be No. 1b, East Dulwich Road, S.E. (ground floor suite). Telephone: New Cross 122.

Messrs. Clark and Co., manufacturers of Xelite and Xelstone, announce that as from June 24th, 1911, their address will be 56, Buckingham Gate, S.W.

Proposed New Art Galleries for Birmingham.

The General Purposes Committee of Birmingham Corporation have reported in favour of at once providing an important extension to the municipal buildings on the Great Charles Street frontage. Plans are submitted for an upper and lower ground floor, to be devoted chiefly to the occupation of the Tramways and Gas Departments, and the Patent Library. Over these offices twelve additional galleries can be built for art purposes, including the museum of casts, and to these an important entrance and staircase would be provided in the centre of the Great Charles Street façade. The architects' estimate of cost for this work is £53,350.

Frauds on Builders.

At Peterborough Quarter Sessions on June 30th, a man was sentenced to 15 months' imprisonment for defrauding builders. His mode of operation was to write from a London address, asking builders to tender for erecting a house and to send £1 1s. for specifications. It was stated that four complaints had been received from Chelmsford, 13 from Leicestershire, two from Stratford-on-Avon, one from London, five from Peterborough, two from Cambridge, and one from Ringwood (Hampshire). Prisoner in all sent out 186 circulars.

Removable Lamp Standards.

The wastefulness involved in the temporary effacement, and subsequent reinstatement, of street refuges, and the removal of lamp standards, in order to clear the road for state processions, has excited general comment, and Mr. F. W. Speaight suggests a remedy. He thinks that the Westminster City Council, before restoring the roads to their former condition, should consider the possibility of designing an iron refuge kerb and lamp standard that can be safely let into permanent sockets, and kept in position by bolts. Removal and restoration would then be quite easy and inexpensive.

Architects' Assistants and the Insurance Bill.

The following letter has appeared in the daily Press:—

"SIR,—The Executive Council of the Guild of Architects' Assistants desires to point out to your readers the probable effect of Mr. Lloyd George's proposals on the architect's assistant. It has hitherto been the custom of the profession to pay the full salary to an assistant during sickness. The proposed employers' contribution will provoke the discontinuance of this customary benefice, leaving the assistant with the State allowance, and taxing him with the payment of the premium to obtain it. As this deplorable result will affect not only the employees of an architect, but probably the bulk of clerical workers in similar employment, we believe it necessary to inform the public of a grievance of some magnitude.

"I am, Sir, your obedient servant,
"ERNEST J. DIXON, A.R.I.B.A.
"(Hon. Sec. Guild of Architects' Assistants)."
"137, Church Street, Edgware Road, W."

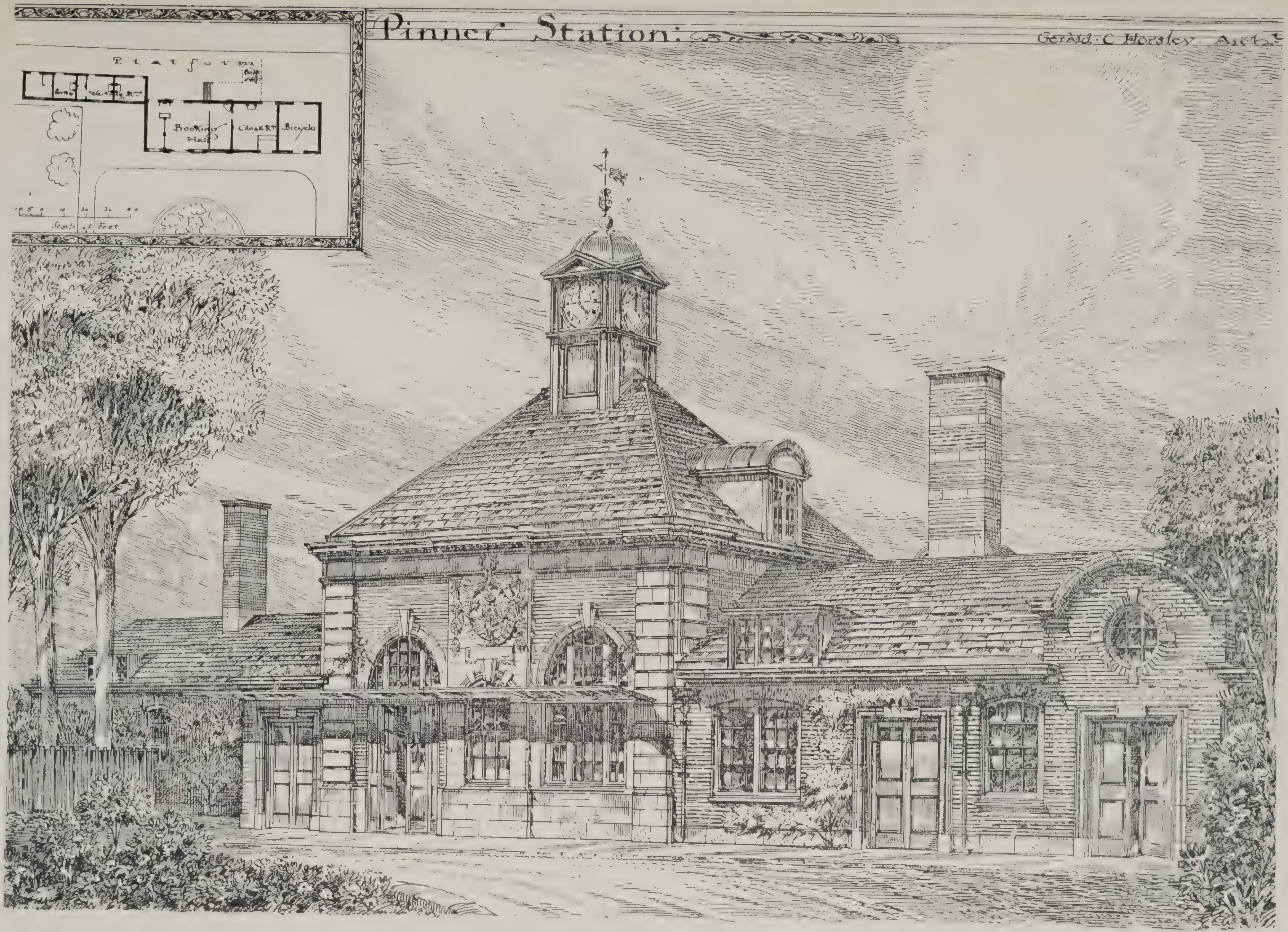
Proposed New School for Gedling.

It is proposed by the Notts. County Education Committee to build a new school for Gedling on Mapperley Plains to accommodate 300 children, and a central hall capable of being converted into two 60 class-rooms if needed. The cost is estimated at £4,350. Plans have been prepared and submitted to the Board of Education.

MEMORIALS TO KING EDWARD.

The Executive Committee of the Scottish National Memorial Central Fund state that the memorial is to be placed in Edinburgh, and it is proposed that it should be associated with the Palace of Holyrood in the form of a suitable erection in or near the Palace grounds. One suggestion is that it should take the form of a handsome gateway at the Canongate entrance to the Palace grounds, with a statue of King Edward forming part of the structure; another is that there should be erected two triumphal arches, one at each end of the present Forecourt; and a third is that the Forecourt of the Palace should be remodelled and an appropriate memorial, embracing a statue of King Edward, placed at a suitable spot within it. As, however, the form which the memorial should take will depend upon the amount subscribed and the views of the subscribers, nothing definite has yet been decided upon.

The East End Jewish Memorial to King Edward VII. is to take the form of a stone drinking fountain, with bronze figures, to be erected in Whitechapel Road outside the London Hospital. The height of the fountain will be 16ft. The general scheme is of a pylon at the base of which is a drinking fountain. On one face of the pylon will be a medallion bearing a portrait of the late King, and on the reverse a similar medallion bearing an inscription. The pylon will be crowned by a figure of Peace bearing an olive branch as an emblem of the character of the King and his reign. On either side above the water-basins will be groups; one of them emblematical of Justice, and the other of Liberty, under whose protection figures of boys will be shown engaged in the pursuit of learning and industry.



GERALD C. HORSLEY, F.R.I.B.A., ARCHITECT.

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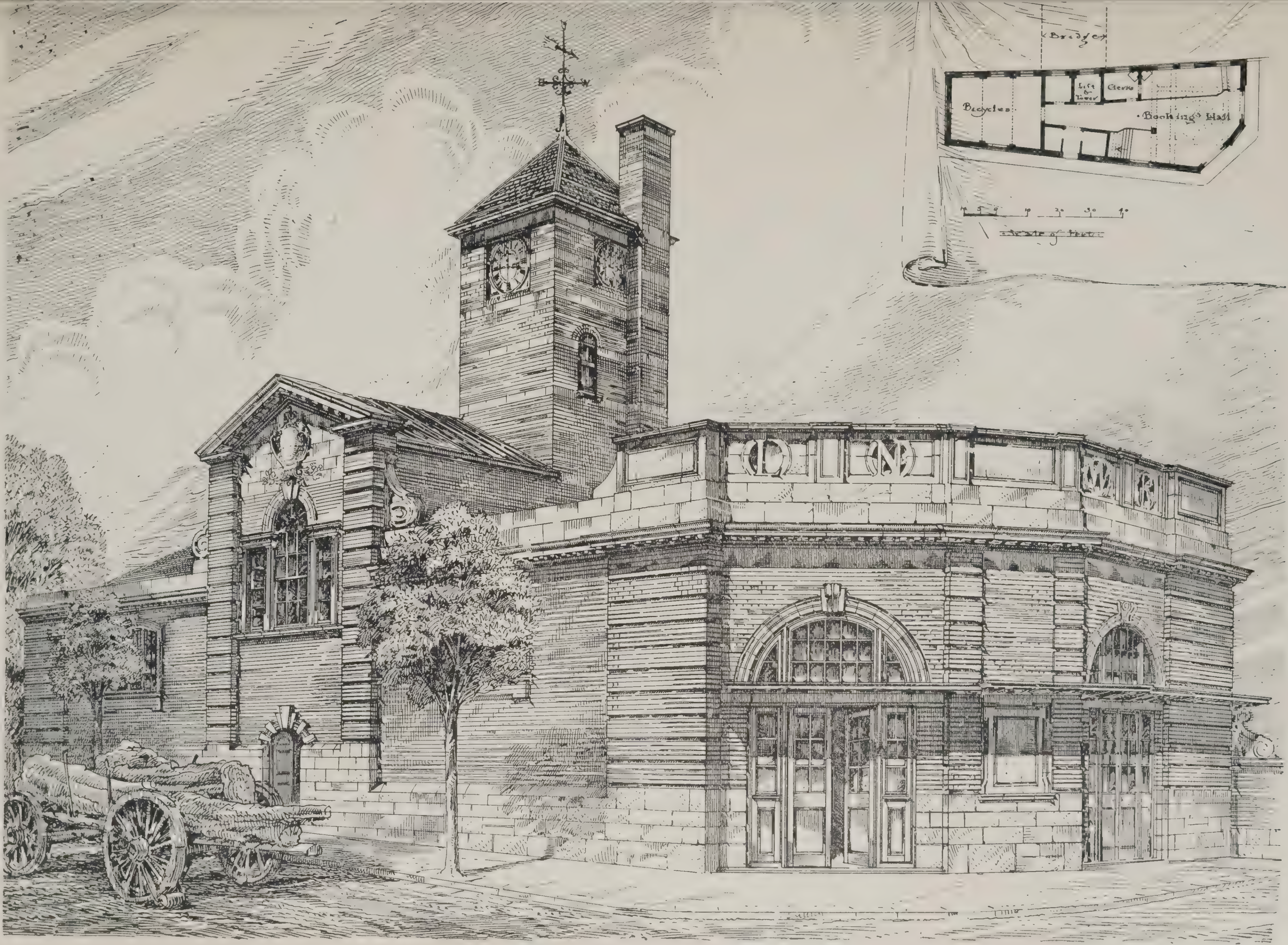

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PICTURE EXHIBITIONS.

At the Goupil Gallery, a series of paintings by Mr. T. E. Mostyn, under the title "Romance in Colour," is rather worth looking at, though titles of that kind are not as a rule very promising, as they generally mean artificial effects rather than genuine nature study. These pictures are mostly studies of special effect, some of them rather imaginative than real; but their author has a real feeling of colour and for poetic effect in landscape, and his largest picture, "The Domain of Arnheim," is rather a grand piece of scene-painting of the imaginative order. There are fine poetic suggestions, too, in "The Garden of Memory," "Peace," and "The Temple of the Morning Sun."

The Pastel Society.

Pastel is a medium of execution better understood in France than in England. It is a form of art better suited for figures than for landscape, and is mostly used for that class of subject by French artists, either for portraits or for figure studies. In using it for landscape, it is almost inevitable that the effects should be somewhat crude; the colours cannot be mixed as in water colour, so as to get the fine graduations of tone needed in landscape; unless one colour is hatched over another (which can only be effectively done on a rather large scale), the pastellist in landscape painting is reduced to taking the nearest colour he can get to the one wanted, and a landscape is thus cut up into sections of colour which do not blend as in nature. There are a good many landscapes in the Pastel Exhibition at the Institute of Water Colours, and their general result is not very satisfying. Occasionally we find a powerful effect, as in Mr. Walter James's "Cheviot," and in a landscape of very simple contrasts of effect, as in Mr. Hammond's "Bait-gatherers," where the principal elements are a beach and a chalk cliff. Figure subjects are more successful, but there are not enough of them, nor are they all very good. Mr. Melton Fisher's portraits, especially the head entitled "Threads of Gold," are the best things; the one mentioned shows exactly the style of handling which is best for pastel. The general impression produced by the exhibition is that there is too much attempt to treat pastels as pictures, instead of regarding pastel as a medium with special limitations of its own.

Royal Water-Colour Society Art Club.

This is a club in connection with the Society of Painters in Water Colours, mainly consisting, we believe, of amateurs; though some well-known artists are also members. Regarding it as mainly an amateur society, the exhibition which it has been holding at the Water Colour Society's rooms gives one a high idea of the amount of amateur talent in water-colour art which exists among us. The exhibition, which entirely fills the gallery, is a very good one, containing many excellent drawings. Among the very best are two by Mr. Marcus B. Huish. Near to them Lady Ford's "Moorland on Dartmoor" is another good example. Mr. Newton Benett has two fine drawings, "Groombridge Place" and "The Old Mill." Miss T. Hall Hall and Miss C. Hall Hall show some good work; Miss E. Ramsay's "High Tide, Rye," deserves also special mention. There are a good many architectural subjects; a good interior of Durham by Miss Drake, and a pretty picture of the buildings of "Sackville College, East Grinstead," seen through an open door in the foreground. The Rev. E. Holroyde's "Henry VII. Chapel" is well drawn, but errs on the side of being too hard and precise in finish. Architecture should not, certainly, be treated by water-colourists as a mere washed-out effect, with all detail lost, as it too often is; but it must have pictorial effect, if treated as a picture, and not be reduced to a hard mechanical precision, which is not in fact the impression ever given by an old building.

The Leicester Gallery.

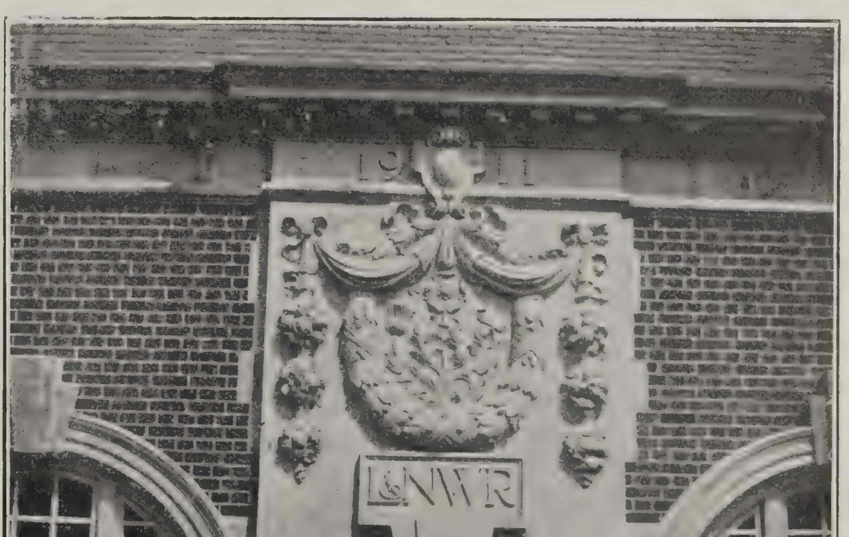
At the Leicester Gallery there is a representative collection of the etchings of the late Sir Seymour Haden. Many of these are familiar to all who are interested in etching. They are rather unequal. At his best, Seymour Haden's etchings—as in "Egham" and "Egham Lock"; the "Yacht Tavern, Erith"; "Firs—a Study" —are models of what etching should be; and the well-known "Breaking-up of the 'Agamemnon'" may be called a work of genius. Others of his etchings are overloaded with lines and too sketchy; though the collection is a most remarkable, indeed a wonderful one, to have been produced in the intervals of a doctor's professional practice.

WEST-END IMPROVEMENT SCHEME.

The Westminster City Council recently declined to consent to the scheme submitted by Mr. John Murray, F.R.I.B.A, for new building lines for part of Glasshouse Street, The Quadrant, Piccadilly, Piccadilly Circus, and Regent Street. The plan showed a straightening of the building lines on both sides of Regent Street from Jermyn Street to Piccadilly Circus, some land being ceded to the public way and some taken away. It was proposed to set back the corner of Swan and Edgar's premises some 10 ft. to 12 ft. and to add the land to the public way, while a small strip of The Quadrant was to be taken from the footway. The plan shows other modifications. Now, however, the London County Council informs the Westminster Council that—(1) The scheme submitted by Mr. Murray is in accordance with the understanding arrived at when a conference was held between the representatives of the Office of Works, the County Council, and the Westminster City Council; (2) that there is little objection from the Building Act point of view; (3) that a large portion of the site now occupied by buildings will be surrendered in exchange for land taken from the public way; and (4) that should the City Council persist in its refusal to sanction the absorption of the land, the Office of Works may decide to erect the buildings to the existing lines. The Westminster Council nevertheless maintains that advantage should be taken of the pulling down of the property between Regent Street and Glasshouse Street for the widening of the latter.

HARROW AND PINNER RAILWAY STATIONS.

The Harrow and Wealdstone station of the London and North-Western Railway has lately been erected on the Wealdstone side of the line. The materials are red bricks from Messrs. Lawrence, of Bracknell, and Portland stone. The roof is covered with Westmorland slates. The tower contains a large luggage lift for taking luggage to the bridge level, and there is a chamber for a clock above. The builders were Messrs. Higgs and Hill, Ltd., of Crown Works, South Lambeth Road, S.W. The carving was executed by Messrs. W. Aumonier and Son, of New Inn Yard, Tottenham Court Road. Mr. Gerald C. Horsley, F.R.I.B.A., is the architect, who likewise designed Pinner Station, which has lately been built for the same company, and is also of red bricks from Messrs. Lawrence, of Bracknell, and Portland stone, and the roofs here also are covered with Westmorland slates. The builders were Messrs. Holliday and Greenwood, Ltd., of Loughborough Park Works, Brixton, S.W. The carving was executed by Messrs. W. Aumonier and Son, of New Inn Yard, Tottenham Court Road.



DETAIL OF CARVING ON NEW STATION AT PINNER.
GERALD C. HORSLEY, F.R.I.B.A., ARCHITECT.

HOUSES FOR SMALL HOLDINGS.

The Royal Agricultural Society of England have now issued (price 1s.), through Mr. John Murray, Albemarle Street, London, W.C., the report by the judges of the competition for plans of houses and buildings for small holdings which was held in connection with the society's Norwich show which was opened last week.

The judges of the competition, Messrs. Frederick Reynard, W. McCracken, and Arthur Vernon, say that at the present time, when large estates are being broken up, and the Government are pressing County Councils to acquire land for small holdings, the provision of houses and buildings adapted for such small holdings that will attract the class of tenants who will pay the rents that will have to be demanded, has become a burning question.

This being so, and having in mind the success that attended the competition in 1908 for plans of buildings for a farm of 300-400 acres, the Council of the Royal Agricultural Society of England came to the conclusion that the time had arrived when prizes might usefully be offered for plans of houses and buildings suitable for small holdings.

Four prizes were offered, amounting in all to £55, divided as follows:—First, £25; second, £15; third, £10; fourth, £5. Each competitor was required to pay an entrance fee of 10s. 6d.

The regulations required that the plans submitted should provide accommodation suitable for a mixed farm not exceeding fifty acres in extent; the dwelling house and buildings to be suitable for a small holding. Plans, elevations, and sections of the house and buildings had to be drawn to a scale of eight feet to one inch. A general specification and short descriptive statement had to accompany each set of drawings, giving full description of materials proposed to be used, and also an estimate with particulars stating the basis on which such estimate had been calculated. A detailed specification was not required.

The points to which the attention of the judges were specially directed were:—(1) Economy of planning and the cost of construction and subsequent maintenance; (2) convenience of arrangement for working and accommodation for animals.

It was specifically stated in the conditions that the cost of the house and buildings must not exceed £600, inclusive of the gathering of rain water and disposal of sewage, but exclusive of the cost of a well or bore-hole and of roadways and fences.

In spite of the fact that no very long notice had been given of the Society's intention to offer these prizes a satisfactory entry of seventy designs was received. The judging occupied three days, the 7th, 8th, and 9th June.

None of the plans showed anything exceptional in the way of originality, though a great deal of care, and the expenditure of much time, were necessary to enable the judges to arrive at a decision as to the relative merits of the different designs. While all the prizes offered have been awarded, the judges are of opinion that not one of the sets of plans submitted by the successful competitors can be regarded as a "model" or as one to be recommended by the Royal Agricultural Society for general adoption.

Meritorious features were observable in many of the designs, and others with certain alterations could have been made more satisfactory, but none could be regarded as entirely so.

Several well-finished designs betrayed a lack of practical knowledge of the requirements of the equipment needed for a small holding.

A few possessing certain good points had to be rejected in view of the fact that when assessing the cost on a common basis it was considered that the buildings could not be erected for the sum (£600) specified in the conditions.

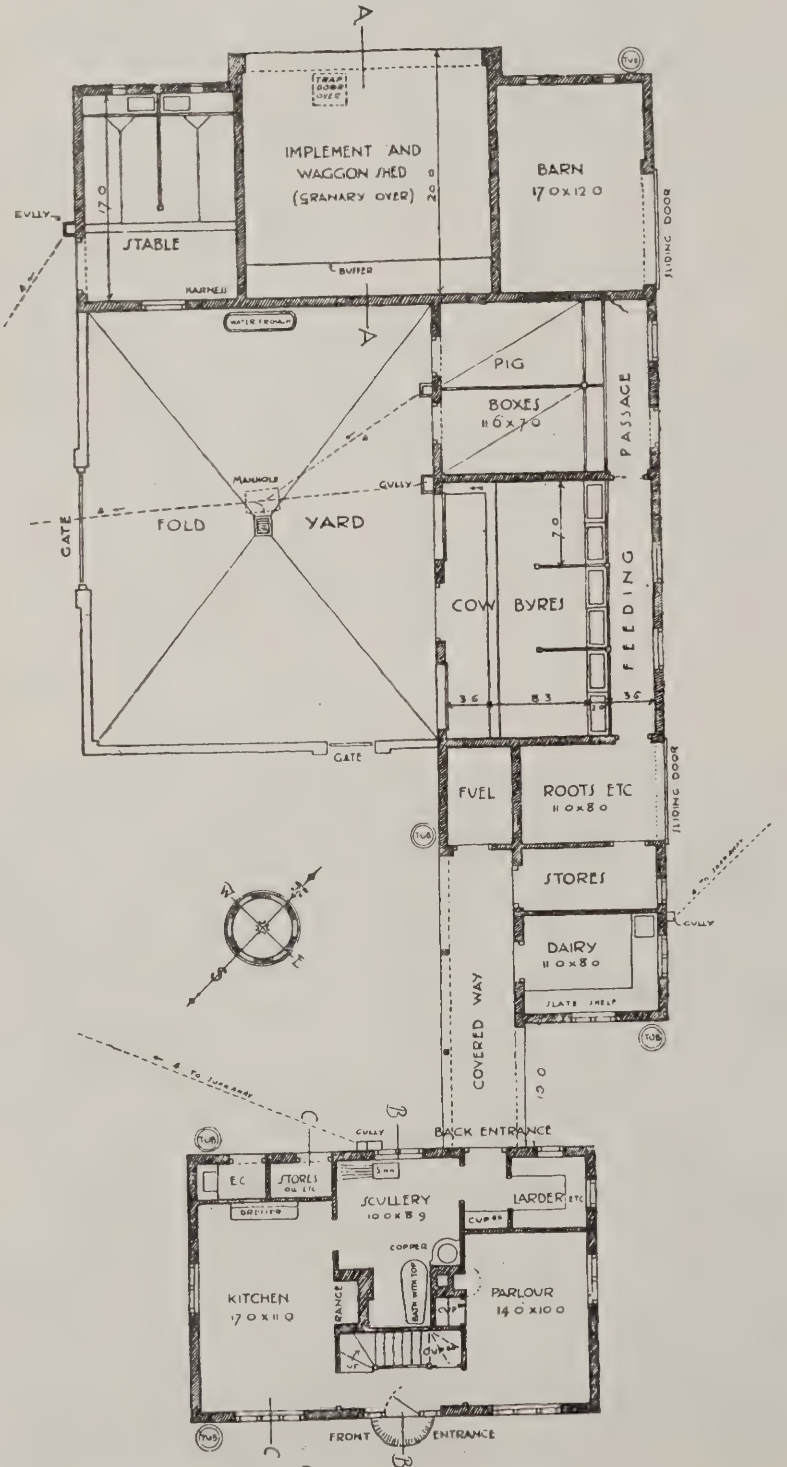
It was also felt that insufficient attention had been given by most of the competitors to the importance of simplicity of construction, and facility for extension and such compact arrangement in planning the buildings as would most tend to the economy of labour.

The majority of the competitors, however, kept in view the necessity for the occupier to have a close oversight of his stock in the buildings, with convenien access to them from the dwelling-house.

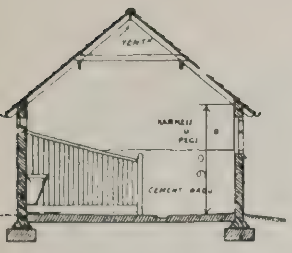
In many cases the houses were to elaborate, and of a class superior to tha required for a fifty-acre holding.

The judges recognise that considerabl thought and labour has been expended o the preparation of the designs, but i many cases suitable accommodation an economic construction have been sacrifice to the desire to produce a "pretty" plan.

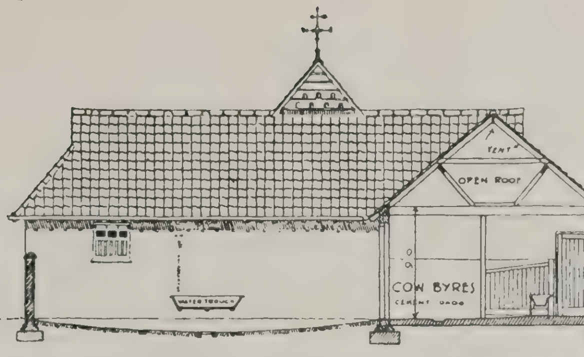
Out of the seventy entries, the judge in their preliminary inspection selecte twenty-seven for further examination which resulted in nine beng chosen fo final adjudicaton. Each estimate of thes selected plans was reduced to a commo basis for purposes of comparison, th



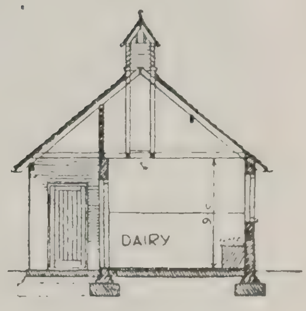
FIRST PREMIATED DESIGN FOR HOUSE AND BUILDINGS FOR SMALL HOLDING. LESLIE T. MOORE, A.R.I.B.A., ARCHITECT.



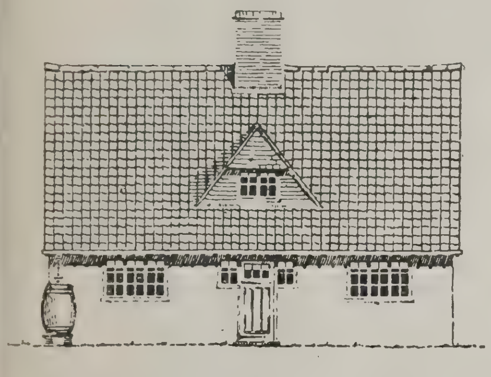
Section through Stables



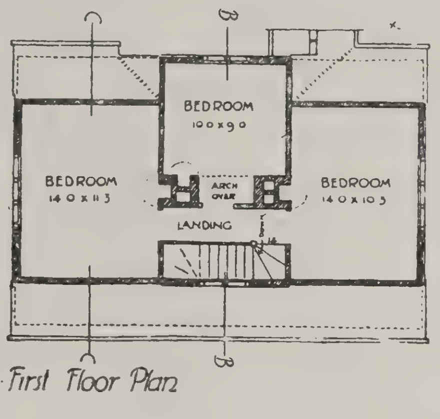
Section through Yard & Cow Byres



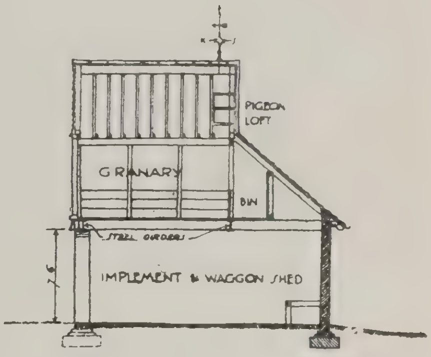
Section through Dairy



South East Elevation Front to Road



First Floor Plan



Section A-A

FIRST PREMIATED DESIGN FOR HOUSE AND BUILDINGS FOR SMALL HOLDING. LESLIE T. MOORE, A.R.I.B.A., ARCHITECT.

society's surveyor, Mr. J. Reginald Nayler, F.R.I.B.A., acting as assessor. Finally the judges made their awards as under:—1, £25, "Simplicity," Leslie T. Moore, A.R.I.B.A., 3, Raymond Buildings, Gray's Inn, London, W.C.; 2, £15, "Lectary," Hunter and Woodhouse, of Belper and Derby; 3, £10, "Ploughboy," John P. Blake, 60, Richmond Park Road, Kingston-on-Thames; 4, £5, "Multum in Parvo," Thomas P. Bausor, 18, Howard Street, Wakefield. Commended: "Farmer John," Henry T. Tate, County Land Agent, County Hall, Beverley; "Gargoyle," E. W. Hilton, Mossburn Buildings, Stamford New Road, Altrincham; "Chevy Chase," Arthur Preston Ker, South Wood, Riding Mill-on-Tyne, Northumberland.

The designs of the four competitors who gained prizes, together with their specifications and estimates, are reproduced as an appendix to the report.

In the descriptive statement that accompanied the first prize design it is noted that in the preparation of this scheme the author's chief aims have been simplicity in design with good construction, coupled with economy and convenience. Brick walling, concrete floors, and pantile roofs are briefly the materials proposed.

The farm has been assumed to be about fifty acres in extent, half arable land and half grass suitable for the production of milk. The site of the homestead is taken as almost level: a slight fall to the south is suggested.

The house is planned in a distinct rectangular block, having a covered way connection to the dairy and farmstead. Due regard has been given in the planning of the house to the class of tenants for whose habits of life it is intended; owing to the fact that the vast majority mainly live in one room, a large kitchen (17 ft. by 11 ft.) is provided, as the general living room, having the best aspect, and commanding the entrance to the homestead. The parlour (14 ft. by 10 ft.) has a south-east aspect, while the scullery and larder, etc., are arranged at the back.

A bath with a hinged table top over is suggested in a recess in the scullery, with an independent copper adjoining, having a hood arranged to carry off the steam.

The first floor, approached by a light staircase, provides three well-proportioned bedrooms, all having fireplaces, one central chimney stack being the basis of the plan. The height of the ground floor is 8 ft. 4 in., and the first floor 8 ft. The lighting and ceiling areas have been carefully proportioned to comply with the Local Government Board Model Building By-laws.

Special attention has been given to the position of the dairy, which is isolated as far as economy will allow, and is arranged with a north-east aspect, being sheltered by the house and a verandah 6 ft. 6 in. wide on the south, a valuable asset for cleaning utensils and purifying same by exposure to the air. The dairy to have a slate shelf as shown, and a Keene's cement dado, 4 ft 6 in. high, painted with Paripan white enamel paint. The floor to be cement laid to a fall to a gully outside the building. Ventilation is provided by air gratings at the floor level, and an exhaust shaft in ceiling.

The farmstead provides accommodation for six cows, two horses, two boxes for pigs, a waggon and implement shed, with granary over, a barn for storing corn, cake, etc., and a root and fodder house, etc.

The buildings form two sides of the fold yard, which has an area of 1,000 feet super., giving shelter from the north and east. The cow house, opening direct from the fold yard on the south, has a feeding passage on the north-east side, and provides a cubic space of 730 feet per cow. The large openings in the south wall are provided with shutters hung at the top to let down, the windows in the north-east wall to have 10 inches of glass, with the lower part fitted with a slide on the "hit and miss" principle. Top ventilation is attained by ridge tiles placed at right angles to the ridge at intervals.

The disadvantages of the usual low pigsty with its small yard are numerous, consequently the box form has been adopted, the boxes having access to the fold yard and a feeding passage, thus being suitable for young stock or calves, etc., when not used for pigs. The division between the boxes to be six feet high. The walls of cow house and boxes to have a cement dado five feet high. The ventilation of stables and pig boxes to be as described for the cow house, with the addition of louvres over the stable. The doors of these to be made in two halves. Stabling for two horses is provided adjoining the waggon shed, which has a wide opening to the north, providing accommodation for a waggon, tumbrel, drill and other implements. A granary fitted with bins for grain is provided over the waggon shed.

Compactness in planning and minimising of labour in the disposition of the buildings has been the chief object kept in view.

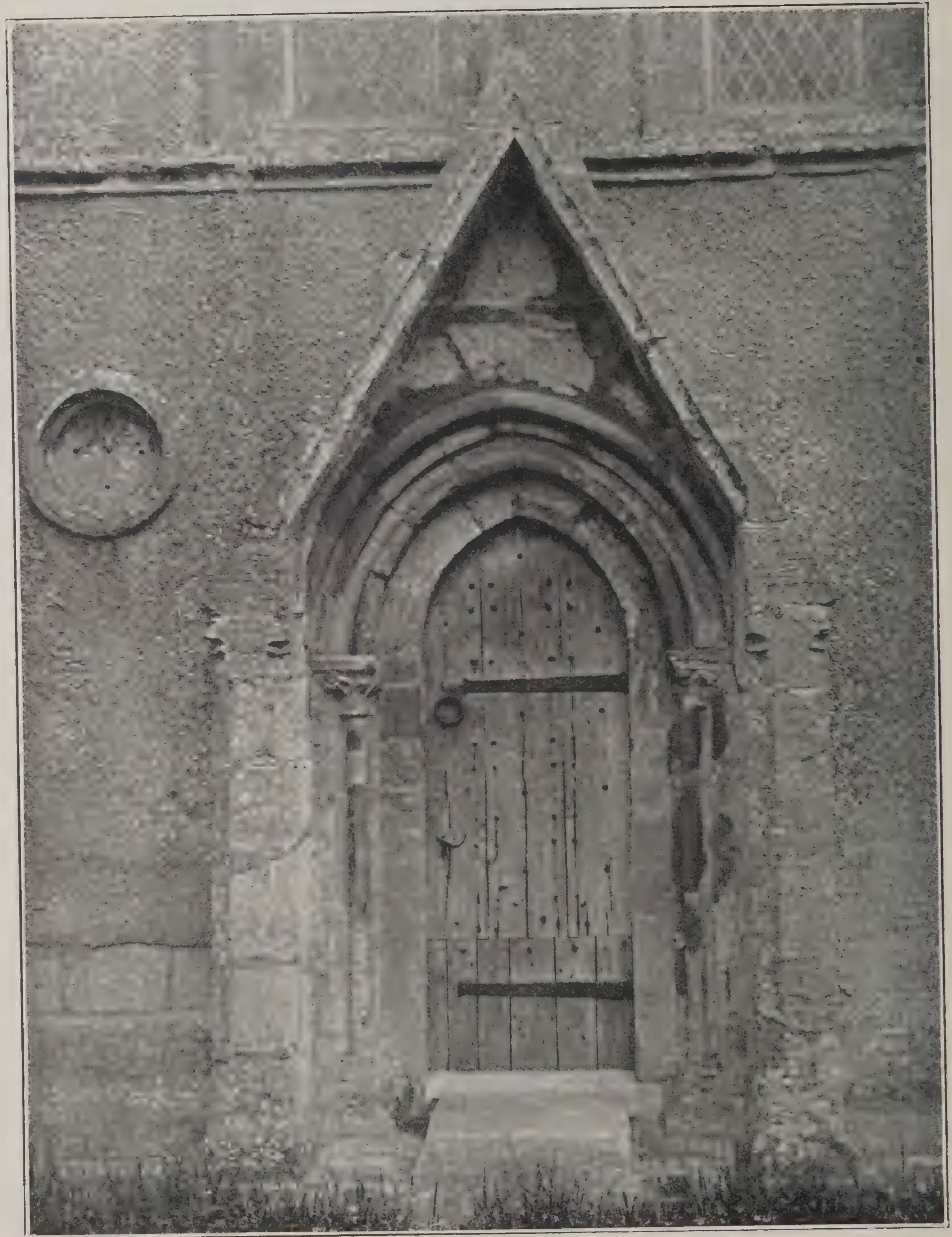
The cost of the buildings depends considerably upon local circumstances.

The following estimate is based on the principle of cube at prices found by experience to be reliable for most districts, and at the same time remunerative to a builder.

The cube is measured according to the usual practice from the top of concrete footings to half way up the roof.

	£	s.	d.
House: 13,174 cubic feet at 5d. per foot cube	274	9	6
Farmstead: 26,016 cubic feet at 3d. per foot cube	325	4	0
Total	£599	13	6

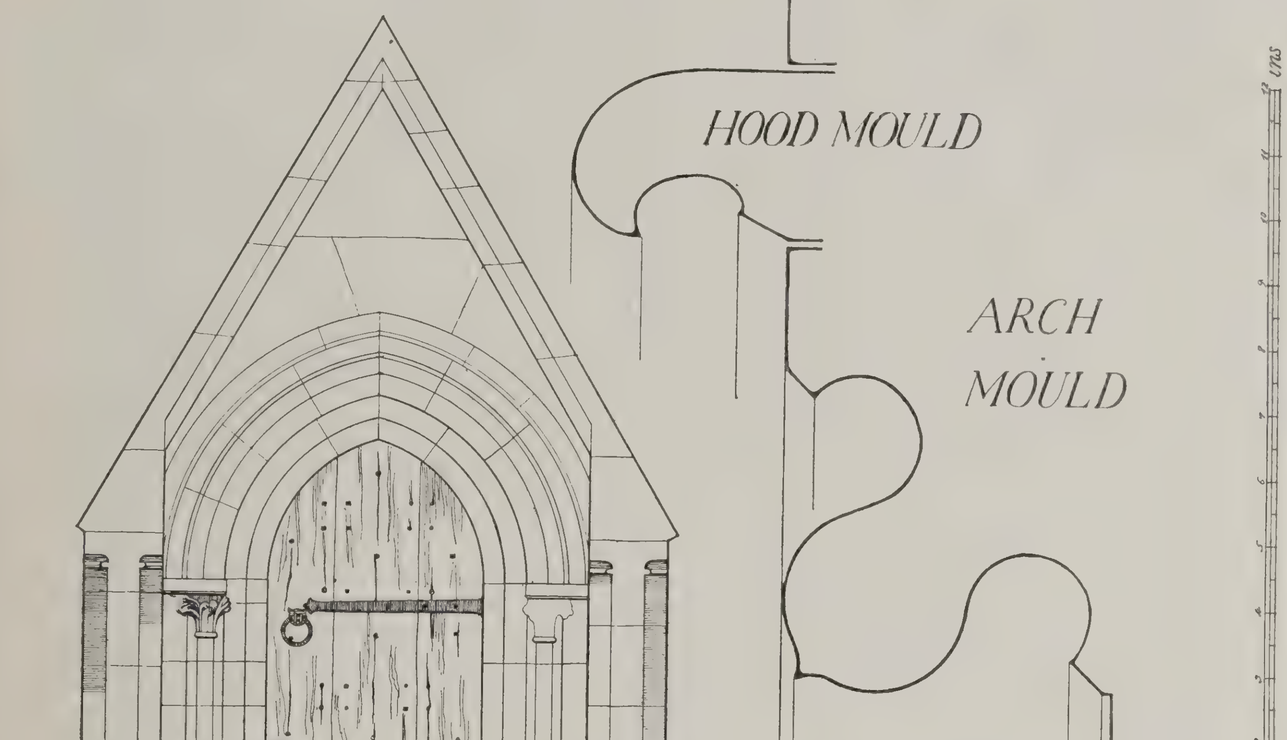
From experience the author feels justified in stating that the building could be carried out in a thoroughly sound and workmanlike manner with the materials specified for the above sum.



Perhaps the most interesting feature of this small doorway is the sharp-pointed hood, which is supported by two projecting pieces of stone, like buttresses. An interesting foliated capital, with a touch of Romanesque stiffness, crosses one of the capitals. The circular sinking to the left of the doorway is another interesting feature; it is one of a series in which bronze crosses were formerly fixed.

CHANCEL DOORWAY, UFFINGTON CHURCH, BERKSHIRE.
(See "Details Old and New," p. 22.)

DOORWAY TO CHANCEL UFFINGTON CHURCH BERKS



MEASURED BY J. M. W. HALLEY. DRAWN BY BERNARD R. PENDEREL-BRODHURST.

DETAILS—OLD AND NEW.—XV.

Doorway at Uffington Church, Berkshire.

Uffington church, in the county of Berkshire, is a small building, cruciform in plan, and celebrated for its octagonal tower. It possesses a beautiful porch, and several extremely interesting doorways, one of which is now illustrated. The walls of the church are of local stone, rough cast, with stone facings, and the whole effect is extremely quiet and good. A feature almost unique in ecclesiastical architecture is the series of circular sinkings disposed around the building. There are twelve of them in all, each of which was once decorated with a bronze cross. The crosses have all disappeared, and the only reminder of them are the significant dowel holes. One of these sinkings is to be seen on the photograph, at the side of the doorway. Winchester Cathedral possesses similar consecration crosses. Perhaps the most interesting feature of the small doorway is the sharp pointed hood, which is supported by two projecting pieces of stone, like buttresses, splayed on the arrises and finished top and bottom with delightful stops, in the fancy of the early English builders. The door itself, set in its midst, is extremely simple; a shallow splay to the jambs, a slender shaft formed out of the second plane, scarcely disguises its elementary forms. An interesting foliated capital, with a touch still of Romanesque stiffness, remains to crown one of the shafts, whilst the other has perished. The arch mouldings are nearly as simple as those of the jambs. It is not these features, however, which give the character of the doorway, but its strong framing buttresses (well founded and supported), with the sharp stone hood which rests upon them. This particular doorway gives into the chancel. Another, no less interesting, leads into the south transept. All the work has a kind of individual touch, so human in its appeal, and so fascinating.

J. M. W. H.

BUILDING INTERESTS IN SOUTH AFRICA.

(From our Special South African Correspondent.)

Johannesburg, June 5th.

Increasing Imports.

The increasing imports of building articles into the Union of South Africa is a sure sign of the prosperous state of trade. Building is, in fact, progressing actively all over the country. In three months we import as much as £27,594 worth of cement; £65,876 in electrical fittings; girders value for £22,247; galvanised iron £93,103; unmanufactured wood, £174,223; and zincware £33,719. In all these articles there is a very considerable increase over the three corresponding months of last year.

Building Activity.

Residential buildings are increasing in the suburbs of Johannesburg, which goes to prove that the population is becoming more settled. Formerly the common idea was to make money and clear out with it to the Old Country. That state of affairs has changed, very much to the benefit of South African towns.

Near to Park Station there is much activity at the present moment, especially in the vicinity of Joubert Street. A large number of important buildings are in course of construction in this quarter, including palatial premises for Messrs. Norman Anstey, while the African City Properties Trust are showing their confidence in the future by building another huge pile of residential chambers. The outlay on these two buildings will not fall far short of £150,000. Tenders are also being called for the erection of premises for the Young Men's Christian Association. The new premises are estimated to cost £30,000. Just across the road the Union Club have secured a site which is at present occupied by a number of tumble-down shanties. It is the intention of the Committee to erect on this site a building which will cost some £40,000. It will thus be seen that in this one part of the town building to the amount of £220,000 will shortly be under construction.

The Industries Commission.

Several of the master builders of Johannesburg and Pretoria have been giving evidence before the Industries Commission. The Transvaal Federation delegates adopted in its entirety the suggested tariff of the Cape master builders. Generally speaking, the statement of the builders was to the effect that in order that the joinery trade of the Transvaal Province might be placed on a sounder basis, it was absolutely essential that raw materials in the shape of timbers should be sent inland at the least cost to consumer and manufacturer. In producing a finished article the cost of production naturally is the greatest element from the consumer's point of view, and consequently, now that no barriers exist and South Africa is unified, the nature of coastal competition with the inland manufacturer has to be taken very much into consideration. The rate of wages paid in the Transvaal to skilled whites is 2s. 6d. per hour against an average of 1s. 4d. to 1s. 8d. at coastal ports, a difference of from 10d. to 1s. 2d. in price of labour. With the above noted difference in wages, and without entering into further comparison, it cannot but be admitted that the coastal manufacturers have a decided advantage in cost of production. Therefore, it is obvious that if the joinery and wood-working trade is to be encouraged in the Transvaal, we must look for a means of producing an article equal as nearly as possible to the cost of the same article at the coast. As the standard rate of wages is in the Transvaal placed at 2s. 6d. per hour, we must needs look to the rail rates on the coast-made article sent inland to compensate for the difference, and also for the rough or raw material to be sent inland at the cheapest possible railway rate in order to again aid the wood-worker in the Transvaal to compete against the coastal manufacturer. These, shortly, embrace the only means which can be recommended as steps to encourage the trade and to provide an indication as to how the scope of the industry may be so extended as to give increased work to white mechanics. The Commission has been sitting in Pretoria this last week, and now changes its venue to Durban.

The Coastal Towns.

Reports from the coastal towns as to state of the building trade are decidedly encouraging. The latest report of the Durban building inspector is that 45 plans were submitted, 28 approved, and 14 minor building permits were issued, of the total value of £15,943. At the Post Office (the old Town Hall) the rearrangement of the interior of the building is being pushed ahead, to make it adaptable to postal and telegraphic needs. At the new technical Institute the work has so far advanced that Durbanites can now form a general idea of the appearance of the building.

I notice that some £20,000 is to be spent immediately on the seaward side of the present terminus at Capetown. This is only the beginning of a comprehensive plan of reorganisation, the completion of which will probably involve an expenditure of three-quarters of a million sterling.

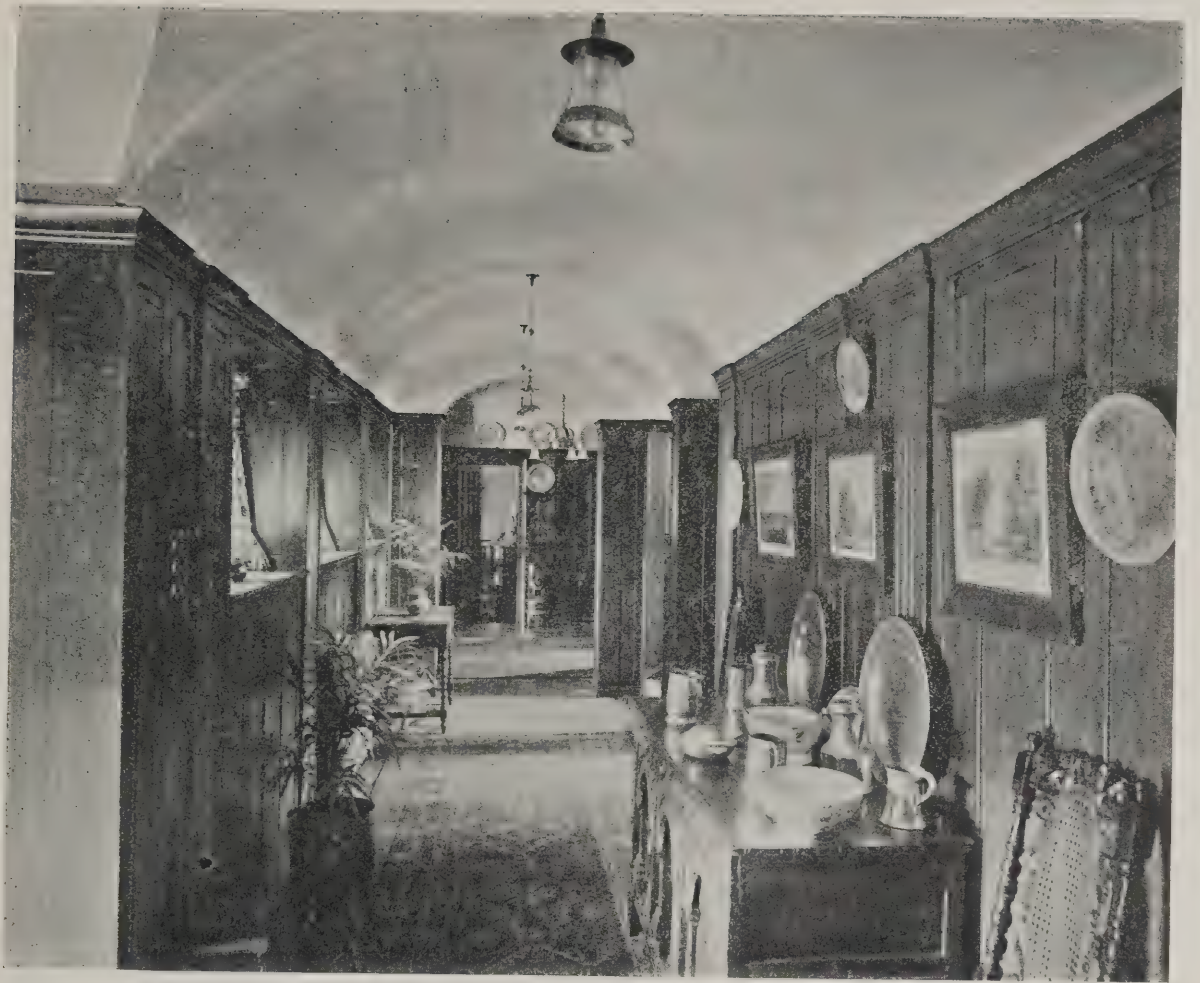
Bulawayo Municipal Offices.

It appears that at a recent meeting of the Bulawayo Town Council it was announced that the Government had agreed to lend the Municipality £30,000 at five per cent., of which £15,000 would be applied to the erection of a block of municipal offices in conjunction with the Government's proposed new post office. The new block will occupy the most central position in town, between the Rhodes and Rebellion Monuments in Main Street.

ST. PAUL'S BRIDGE RECONSIDERED.

Naturally, the somewhat piquant situation with respect to the St. Paul's Bridge project continues to be vigorously discussed. The Corporation is receiving perhaps too much congratulation on its "loyal acceptance" of the instruction of the House of Commons; and Mr. Beresford Pite adopts towards them a properly conciliatory tone and spirit in saying that "as the City have shown no lack either of financial resource or of a drastic courage in the preparation of their first plan, we may expect a handsome solution of their present task." Mr. Pite further ventures the suggestion that, owing to the general importance of the subject and the many interests involved, as much guidance as practicable may be offered by the Corporation to Parliament upon two as yet unsettled parts of the problem. First, he says, as to the architectural character of the new bridge itself (a necessary corollary of the instruction). The design of the bridge should now be defined, as decision must be made sooner or later whether it is to be of stone like the Cathedral, or London or Waterloo Bridges, or of metal like those at Southwark or Charing Cross. Secondly, whether or not the tramway upon the bridge is sufficiently provided for as to width and has been fully planned and worked out. Further, he ventures to express the conviction that if requested by the Corporation, the Council of the Institute would at once nominate an honorary commission of architects to confer with them upon this matter of national importance. [But see our leader.]

Mr. Harold Spender, as chairman of the London Reform Union, pursuing the controversy on other lines, asks the rather awkward question, "What are these Bridge House Estates which we so easily take for granted as part of the great possession of the City Corporation?" They represent, he says, the proceeds arising in the twentieth century from the bequests left by patriotic Londoners of earlier centuries for the repair and upkeep of London Bridge—then the precious and only means of communication between London and the South of England. Those bequests have increased so much that the income for recent years leaves a surplus for each year of about £80,000, which means an accumulation in twelve years of nearly a million sterling, over and above all loan charges and repayments. He suggests that as the Committee is therefore in possession of an income far greater than they can possibly require for the bridge-work of the limited area over which they have jurisdiction, Parliament should give the



ENTRANCE CORRIDOR IN HOUSE AT WEST VALE, HALIFAX. WOODHOUSE, CORBETT, AND DEAN, ARCHITECTS.]

power to divert the money for the building and maintenance of bridges throughout the County of London.

Upon the question of the St. Paul's Bridge scheme, Mr. Leonard Stokes has addressed the following letter to the "Times":—

"SIR,—The news of the re-committal of the St. Paul's Bridge Bill by the House of Commons has been received with the utmost satisfaction by those who care for the beauty and dignity of London, and the Royal Institute of British Architects, which felt it to be its duty to take public action by pressing for the reconsideration of the Corporation's proposals, has to acknowledge with the warmest gratitude the powerful and consistent support which its attitude has received from 'The Times' and from the Press generally.

"In the debate of the House of Commons reported in your issue of June 15, some surprise was expressed by members that the Royal Institute of British Architects was not represented before the Committee. The Institute was advised that it would be useless to appear except by counsel, the cost of which was estimated at several hundred pounds. The Council of the Royal Institute did not feel justified in incurring such an expenditure.

I am, Sir, yours truly,
LEONARD STOKES, President of
the Royal Institute of British Architects.
9, Conduit Street, Hanover Square, W.,
June 19."

The City Corporation has invited three eminent architects [whose names are announced in a leader, *ante*] to consider the question fully, and the amended scheme will then be again submitted to Parliament.

R.I.B.A.

At the meeting of the R.I.B.A. held on Monday, June 26th, Mr. Leonard Stokes offered his hearty congratulations to the two recently created knights—Sir Ernest George and Sir Arthur Evans—both of whom were past recipients of the Royal Gold Medal. Dr. Wilhelm Doerpfeld, it was announced, was, in consequence of a severe illness, unable to come to England to receive this year's Royal Gold Medal. Count Wilhelm Bentinck, however, an attaché of the German Embassy, attended in place of Dr. Doerpfeld, on whose behalf he received the Medal.

At the conclusion of Mr. Lawrence Weaver's paper on the "Parentalia" (in the course of which, it may be mentioned, he announced the decease, early in last month, of Mrs. Pigott, the late owner of the "Parentalia"), Mr. H. H. Statham, proposing a vote of thanks, disagreed with Wren's emphatic contradiction of Wotton's statement that plastique was the art of modelling by addition, and sculpture that of modelling by substraction. Wren, in view of the time when he wrote, was quite wrong. Professor Lethaby, continued Mr. Statham, in a brilliant lecture had said that the peculiar merit of Wren was that he could see what could best be done with the Renaissance box of bricks. Wren took some things out of the box which might have been left alone—carved swags of realistic fruit and flowers, for instance. One had only to remember the best detail of Roman and Byzantine work to realise this. The days when Wren designed were not the days of full-size detail drawings, and probably Wren simply indicated the position of a feature, which was left to the carver to work out in his own way. The expression of an idea in plan and section was shown very clearly in Wren's London churches. All the towers were built differently, though the details were taken out of the box of bricks. One other quality Wren possessed, which was called ironically "common sense," presumably because it was so uncommon. An instance of this had been drawn to his attention by Penrose, with whom he had been looking at the model of the first design for St. Paul's Cathedral. Within the chamber in which they stood was placed the first step of a flight which continued beyond the door, so that one should be warned there were going to be steps. Wren saw clearly what should be done, and made allowance for it. The lack of this quality of common sense was shown in a certain modern clock tower, in which the architect had forgotten to make provision of a chase to contain the weights—an oversight of which Wren would never have been guilty. Wren's real quality, however, showed how architecture could express ideas in plan and section.

Mr. Paul Waterhouse seconded the vote of thanks, and commented upon Wren's versatility of character, in which he resembled Leonardo, who was a prince of such men. Wren was a man who could have cast aside the past, but they should be thankful that he did not. They owed a great deal to Mr. Weaver, continued Mr. Waterhouse, as the gift could not have been made but for his able services.

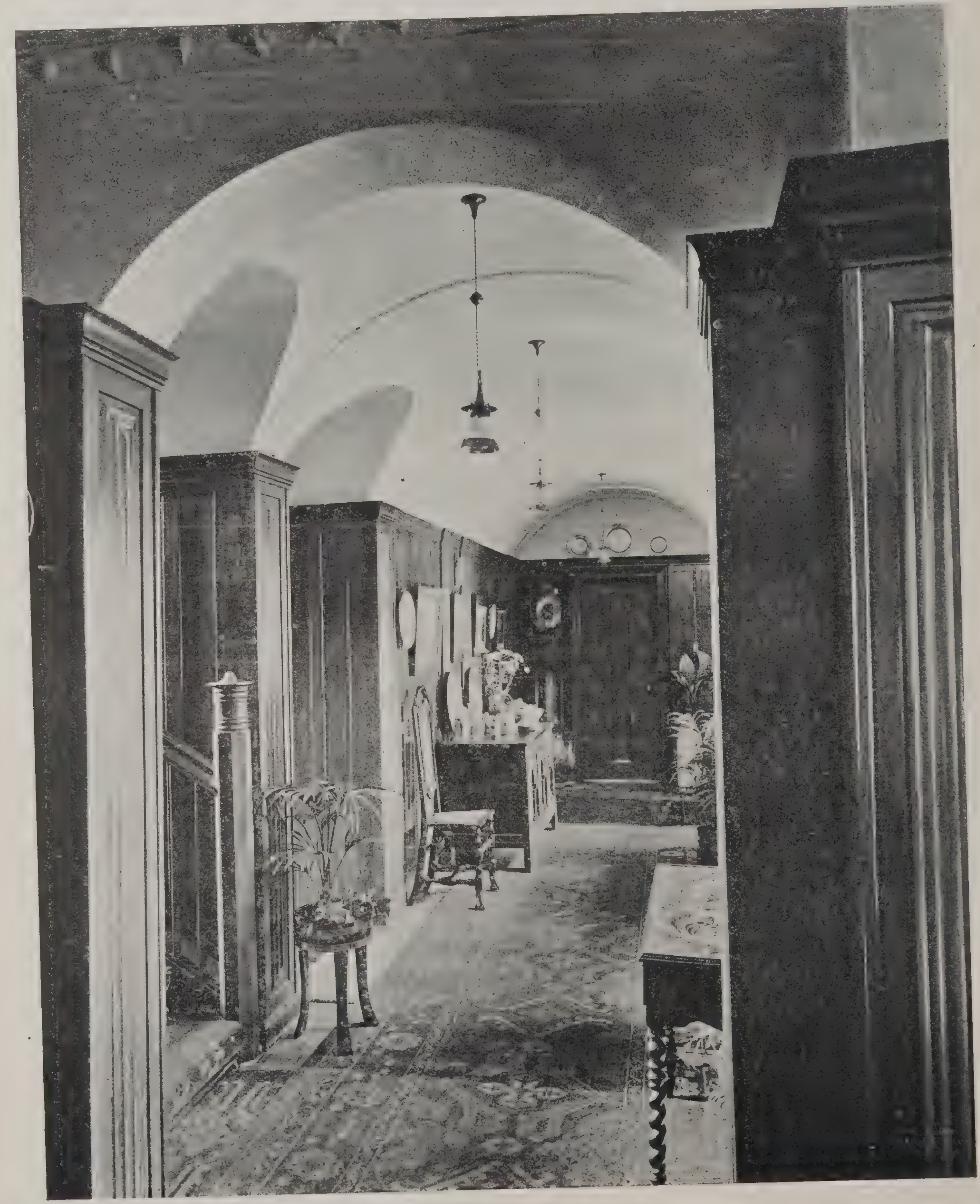
At the conclusion of the meeting Mr. Stokes announced that it had been decided to extend the present session to October 31st.

ROYAL SOCIETY OF ARTS.

The Council of the Royal Society of Arts have awarded Silver Medals for papers read during the past session as follows: At the Ordinary Meeting:—Campbell P. Ogilvie, "Argentine"; Vaughan Cornish, D.Sc., F.G.S., F.C.S., "The Panama Canal"; Reginald A. Smith, B.A., F.S.A., "Roman London"; Philip Joseph Hartog, M.A., B.Sc., "Examinations"; George A. Stephen, "Bookbinding"; Dr. Leonard Hill, F.R.S., "Caisson Sickness and Compressed Air"; James Cantlie, M.A., M.B., C.M., F.R.C.S., D.P.H., "Plague"; George B. Heming, "Art Education in Jewellery, etc."; Professor Raoul Pictet, "Les Basses Temperatures"; Frank M. Andrews, "Architecture in America." In the Indian Section:—Robert Fellowes Chisholm, F.R.I.B.A., F.S.A., "The Taj Mahal"; Reginald Murray, "Banking in India"; Claude Hamilton Archer Hill, I.C.S., C.S.I., C.I.E., "Education in India"; Sir Thomas Henry Holland, K.C.I.E., D.Sc., F.R.S., "Mineral Development in India"; W. R. H. Merk, I.C.S., C.S.I., LL.D., "The North-West Frontier Province." In the Colonial Section:—A. Montgomery, M.A., F.G.S., "Mining in Western Australia"; F. Douglas Osborne, M.Inst.M.M., "The Tin Resources of the Empire"; Captain R. Muirhead Collins, R.N., C.M.G., "The Commonwealth of Australia"; F. Williams Taylor, "Canadian Banking."

HOUSE AT WEST VALE, HALIFAX.

The entrance corridor, hall, and staircase in this house, here illustrated, are panelled in Austrian oak, fumed and wax-polished, the top rail being grooved to form an inconspicuous picture-rail. The windows are glazed with leaded lights, with figure-panels and other decorative leading. Mr. George P. Bankart carried out the modelled fibrous plasterwork. The architects were Messrs. Woodhouse, Corbett, and Dean, of Manchester.



HOUSE AT WEST VALE, HALIFAX: ENTRANCE CORRIDOR FROM HALL.
WOODHOUSE, CORBETT, AND DEAN, ARCHITECTS.

FIRE PREVENTION NOTES.

A Fire Panic at Portsmouth.

An outbreak of fire at a cinematograph show at Portsmouth last week emphasises a particular point to which special attention has been given in this Journal. In an article on "Planning and Designing Electric Cinema Theatres," on p. 65 of the Journal for January 18th of the present year, it was recommended that the lantern-room should be, when possible, outside the auditorium. The audience, which at such exhibitions consists largely of women and children, should not be able to see the flame and smoke which, whether accidentally or naturally arising from the lantern, are likely to give rise to panic. At Portsmouth, where 2,000 persons had assembled to see pictures of the Coronation naval review, a tongue of flame, it is stated, shot through the aperture of the operating-box, and instantly there was a cry of "Fire!" and a rush for the exits. It was reported that some persons were "badly crushed," and had to be surgically treated: but fortunately nobody was killed. Clearly, if the "tongue of flame" had not been visible there would have been no panic; for it would seem that there was no real danger from fire, except to the operator, who was reported to have suffered some rather severe burns.

Cinema Theatre Construction.

The design and construction of cinematograph theatres have no doubt been very carefully considered by architects, whose recommendations, however, are sometimes not carried out so completely as could be wished, because of the uncertainty as to whether this form of entertainment is likely to remain permanently attractive. Nevertheless, on the whole, such buildings are very far from being of the flimsy character that the rather speculative circumstances would seem to suggest. Yet, as might be imagined, there is much room for improvement; and the sooner the proprietors of such buildings are able to announce and to prove that the utmost precautions have been taken against the possibility of both fire and panic, the more likely is this class of entertainment to become increasingly popular and attain permanency. It is necessary to assure the public that the risks are not really so great as those in an ordinary theatrical representation; and this assurance must be based on proof that the lantern chamber is properly isolated, and that the building itself is of fire-resisting materials and construction.

Fire Plug Indicators.

A curious point of law has arisen, involving in some measure the responsibility of local authorities as to fire-prevention. A fire had occurred a considerable time ago at Messrs. Dawson and Co.'s premises at Bingley. Messrs. Dawson alleged that, in consequence of a fire-plug not being accurately indicated, the firemen were hampered in their duties. Consequently, the firm entered an action for damages against Bingley Urban District Council, and were awarded by the jury at the Leeds Assizes £512. Mr. Justice Grantham, however, had overridden the verdict, and had entered judgment for the defendants, on the ground that, in his view, the wrong situation of the index-plate was not the cause of the damage. Against this judgment the firm appealed, and Lords Justices Vaughan Williams, Farwell, and Kennedy, constituting the Court of Appeal, in March last reinstated the verdict of the jury, holding that defendants were guilty of a statutory breach of duty in not properly indicating the position of the fire-plug, and were therefore liable in damages. As it was stated at the time that an appeal to the House of Lords was probable, we have awaited that possible development, but have as yet seen no report of it. Apparently, therefore, the precedent stands that a local authority is responsible for the efficiency of such items of the fire-fighting service as are under its immediate control. It would be interesting to know whether the liability extends to the water authority.

Fire Losses Diminishing.

It has been stated that the annual loss from fire, as regards insured property, is about ten millions sterling—a total that leaves out of account the losses of which the insurance offices take no cognisance—not only the losses upon uninsured property, but the largely unascertainable waste due to dislocation of and injury to business, loss of employment, physical injuries, shock setting up mental trouble, and so forth. At a meeting last week of one of the large insurance companies—the Royal—it was stated, however, that the fire department of that one company showed a surplus of £580,852, compared with £570,614 in the preceding year, and they were again in a position to add £500,000 to the fire fund, which now stood at £2,800,000; the three funds constituting the fire business amounting to £5,389,600. It would hence be a fair inference that the improvement in fire-prevention construction is beginning to tell pretty heavily in this country.

Rules for Lightning Conductors.

A pamphlet on rules for lightning rods, issued by the Phœnix Fire Office, deals with methods of protection, the material of conductors and elevation rods, the number of conductors, earth connections, and special risks. It is pointed out that the only way to obtain absolute security against the disruptive form of lightning discharge is to enclose the building in a metal framework, constituting what has been termed the "bird-cage" system of conductors. Under proper supervision this can be accomplished generally by utilising the rain-water pipes and gutters as part of the system. The ordinary conductors must be fixed in addition, and the whole system should be effectively connected to earth in several places. The material of the conductor should be of copper tape, measuring at least 1in. by $\frac{1}{8}$in., or, if copper cable be adopted, it should not consist of less than seven strands, each $\frac{1}{8}$in. in diameter. Soft iron may be used in place of copper, and except for chemical reasons and for permanence the sectional area need not be greater than in the case of copper. Conductors should be kept a certain distance away from walls, so as to prevent the accumulation of dirt, but they must not be insulated. If a copper plate is used for the earth connection it should be not less than 3sq. ft. in area and $\frac{1}{8}$in. in thickness, and should be adopted only where it will always be in water or moist earth; otherwise connection should be made to the water mains, or the "tubular" system should be employed. The number of connections depends on the ground area of the building, but there are few structures where less than two are necessary. The elevation rod of factory chimneys should be a circular band placed round the top of the shaft, with points fixed at an angle of 45deg., and extending outwards, or an arch of metal, provided with points, may be fixed across the mouth of the chimney.

Safeguarding Art Treasures.

That fire-resisting construction is fully competent to meet at least some phases of artistic demand we are agreeably reminded by the chorus of praise which has greeted the opening to the public of Room No. 12 in the south-east wing of the National Gallery, which has been reconstructed on fireproofing principles. The custodian may now sleep in peace, well knowing that the nation's priceless Dutch collection—its Cuyps, Hobbemas, Franz Hals, Van Goyens, and Ruysdaels—are now as safely housed as non-combustible materials can make them. The lighting from the roof has been warmly commended; and the general appearance of the room has received the highest praise. There is, of course, no reason why an interior (or, for that matter, an exterior) should not be at once artistic and fire-resisting; although it is sometimes alleged that these two qualities are incompatible, and we are therefore glad to point to so striking an example in disproof of the fable. Now that so excellent and so influential a precedent can be cited, it is probable that it will be soon followed in the case of other precious collections, public and private. It is undoubtedly the latter that are most in danger. The public art gallery may, from its use and position, be generally subject to the more numerous and more constant risks, but, on the other hand, it enjoys the more efficient supervision; and it is disquieting to reflect on the treasures of art which, assembled in remote country houses of ancient date, in which there is hardly any provision at all against fire, seem to be foredoomed to perish ingloriously, sooner or later, by that fell agency, unless their owners see fit to set their houses in order.

TRADE AND CRAFT.

Best British Brushes.

The qualities of paint, varnish, and distemper having been brought to so high a degree of perfection, the appearance of the job depends entirely on the means and methods of applying the coating; and in order to secure the best results, it is essential to employ good workmanship, which, however, falls far short of possibility unless good brushes are used. Messrs. G. B. **Kent and Sons, Ltd.**, 75, Farringdon Road, E.C., whose firm has been established well on towards 150 years, have issued a useful illustrated list of their best British brushes and other implements and accessories, in which every requirement of the house decorator is fulfilled. The brushes illustrated include various dusters and jamb brushes, ground brushes of various shapes, distemper brushes, limer heads, copper-bound, tied-stock, and nailed-stock brushes, sash tools, hog-hair fitches, many kinds of varnish brushes, stipplers, softeners, paperhanging brushes, etc., etc.; and there is a complete equipment of graining tools. Blow-lamps, paint kettles, knives and hooks, paint strainers, and other accessories are also listed in variety, and altogether the catalogue will be found to be of the utmost service to those concerned in the selection and use of decorators' tools of the highest class. Brushes of lower qualities are not included in this list, but are separately classified.

CASTLES AND WALLED TOWNS.*

Of antiquarian rather than of architectural interest, Mr. E. Beresford Chancellor's book on "The Castles and Walled Towns of England" nevertheless presents a fair amount of the kind of information that will be welcome to the cultured builder, who is in the habit of spreading his nets far and wide. The gain may not be immediate and practical, but it certainly tends to a larger and clearer comprehension of what we are, whence we are sprung, of the work we have to do, and of the why and wherefore of our methods of doing it. As a rule, it is left to the reader to do his own generalising, and to trace for himself the evolutionary processes, and it can hardly be said that this particular book does much to save him that trouble. There is, however, an account, in the first chapter, of the origin and development of the English castle.

Castles, as we know them most familiarly, were introduced into this country by the Normans, who might not have succeeded—perhaps might not have thought it worth while to attempt the invasion—in conquering the country, if it had been fortified after the manner which, in a way, they had perfected. Viollet-le-Duc claims that the Normans were the first people in Western Europe to build castles, not as isolated fortresses, but as part of a scheme of general defence in which the individual castle became subservient to a political idea, which affected the geographical distribution of the fortresses, and even their individual planning and arrangement. It was this system which, with local modifications, the Conqueror introduced into England.

Godwin's classification of castles under four heads is given—namely (I.) Norman (characteristic, a keep); (II.) Edwardian (characteristics, the hall of audience, bartisans, and more frequent use of the portcullis); (III.) Palatial—a growingly convenient dwelling, but the fortress idea still predominating; (IV.) Castellated mansions, in which the comfortable dwelling idea prevails over that of the fortress. Mr. Harvey thinks that the best system of classification is one based on the system of defence adopted, dividing the whole series into two main types—(I.) castles with keeps, and (II.) keepless castles.

It may be supposed that the siege-craft so plentifully exercised in the reign of Stephen suggested many modifications of the form and substance of fortresses; and in the thirteenth century the whole system of military architecture was revolutionised, the process being hastened by the knowledge acquired during the Crusades. During the reign of Edward III. the old fortresses were allowed to fall into decay, or were handed over for use as country gaols, and after it hardly a single new one was built. They were succeeded by the castle-palaces—quadrangular piles, built around a central courtyard, adorned rather than protected by angle-towers, gate-house, and moat. Bolton is cited as an early example, and Hurstmonceux as one—"perhaps the finest"—of a later period. "In exposed situations some attempt at defensibility was made by the thickness of the outer walls and the absence of any important external openings; but the great majority were frankly palaces, with large external windows and walls of no great strength, and their castellation was either a habit or an affectation."

During the Civil War many of the Castles, hastily rehabilitated, played so considerable a part in delaying the issue that Cromwell, on coming into power, caused those that had been occupied by the Royalists to be "slighted"—that is, so far demolished as to render them useless in war. A little later, "villanous saltpetre" rendered this precaution superfluous; although Henry VIII.'s round towers that still dot our coasts have been found difficult to destroy even with modern guns. Those fortresses that remain to us were preserved as halls of assize (Winchester, Oakham, Leicester), prisons (York, Lancaster, Lincoln, Haverfordwest); military buildings (Tower of London, Carlisle, Dover, Richmond); museums (Newcastle, Norwich, Colchester, Taunton). Windsor remains a royal palace. Durham is a university. Warkwich, Berkeley, Skipton, and others have never ceased to be used as dwellings.

The walled towns occupy only two chapters of the ten of which the volume consists. The walls are few in number, and there is but little to say about them. Apart from Colchester and Caerwent, where the walls are partly or entirely Roman, only the following English towns show fairly complete walls, namely, York, Chester, Chichester, Southampton, and Chepstow, while in Wales there are Conway, Caernarvon, and Tenby. Considerable sections of walls are found, for instance, in Berwick, Newcastle, Shrewsbury, Oxford, Yarmouth, Norwich, Rye, and Canterbury. York has preserved all its chief gates and some of its posterns, and there are several gates at Southampton. The west gate at Canterbury is late fourteenth century; and the fine Land Gate at Rye is of similar type and period. The bridge gate—a fortress on a bridge—is now unique. The wonderful vitality of the London walls, of which, in spite of every variety of destructive agency, there are still considerable remains, is duly noted; and the remains in other towns are described; and in an appendix there is a useful list of castles in England and Wales existing or known to have existed. More than a score of admirable photographic plates, and an equal number of illustrations in the text, add greatly to the value and interest of an altogether delightful book.

LEGAL CASE.

Notice under the Building Act.

At the Guildhall (City of London) Alderman Sir Charles Wakefield heard a summons against the National Provincial Bank of England (Limited), at the instance of Mr. John Todd, district surveyor, who complained that the bank, as builders or owners of No. 15, Bishopsgate, on or about the 26th May began to execute certain works upon that building without having given him notice as required by section 145 of the London Building Act, 1894.—Mr. Todd said the work in connection with which these proceedings were taken was the reconstruction of a roof over some water tanks that were enclosed in a brick structure. In his opinion, this reconstruction was not in the nature of a repair (sec. 209), and he was therefore entitled to notice.—Replying to Mr. Stuart Bevan (for the defence), Mr. Todd was willing to admit that there was only one tank—not having been on the premises himself—and that it had been there since the erection of the building in 1860. The woodwork having become rotten, it was renewed. Practically that was all that was done. Like many old buildings in London, this one was not in accordance with the 1894 Building Act.—Mr. Savill (chief clerk): And directly a necessary repair is executed you issue a summons?—Mr. Todd replied that whenever a structural alteration was about to be made he ought to be served with a notice in order that he might ascertain whether the contemplated work was legally in order. In his view he was absolutely bound to take these proceedings. It was quite true that a necessary repair might bring an old building under the comparatively new Act. He had to see that any new roofings were composed of incombustible materials. There was a case recently before the West London magistrate in which a district surveyor took out a summons against a builder for simply removing the old zinc from a roof and replacing it with new. The case was argued, and Mr. Garrett held that the work was not that of necessary repair under sec. 209, and imposed a fine.—Mr. Savill: It seems to me that you cannot repair any old building without bringing it under the 1894 Act.—Mr. Todd: Until they are reconstructed I take no notice at all. This roof has been entirely removed—new timbers used, new boarding, and the old lead put back. In a case like that I consider that the work ought to be brought into accordance with the present law.—Sir Charles said while he felt that Mr. Todd had taken out the summons from a perfectly proper motive, he must dismiss it. He should not allow costs.

FEDERATION NEWS.

Newport (Mon.) and District.

The annual outing of this association will take place on Wednesday, July 19th, to Ludlow. The town is of great architectural and historical interest. It is described as "at once the most interesting, the most picturesque, and the most distinguished of all English county towns." The castle is a study in itself, whether taken historically, architecturally, or archæologically; while the church of St. Lawrence will repay a prolonged examination. The church—generally considered to be the most handsome in all Shropshire—abounds in pre-Reformation stained glass and sepulchral effigies of various justiciaries of the Marches.

Doubtless in old Saxon times a substantial sacred edifice adorned the site, whose foundation is indicated as early as 600. In 1199 this structure was re-modelled on what is now termed "Early English style," the germs of which first appeared in 1175. The unique porch has been many times rebuilt, and is now in the style prevalent about 1200 to 1230. This porch (and that of St. Mary, Redcliffe, Bristol) are the most curious things of the kind in England—unique in their plans, which are sexagons.

It is of historic interest to find that for nearly two hundred years Ludlow enjoyed the rare distinction of being the seat of the President and Council of Wales and the Marches, and now possesses almost intact a mediæval Castle remarkable for its historical association.

Apart from its church and castle, the town and district abound in interest.

The Town Clerk of Ludlow (Mr. John H. Williams) has very kindly written—"That if his engagements permit, he will be very pleased to point out the salient points of the castle and church, and kindly invites the association to the Guildhall, where he will show the visitors some old stained glass, etc." The Guildhall was erected by the Guild of Holy Palmers. If any member is interested in "Masons' Marks," he will find a rich harvest in Ludlow church and castle. In Lower Corve Street are some instances of the old "wattle-and-daub." There are also the remains of Lane's Asylum, an old timber structure, formerly used as a workhouse. In it is a fine room containing an ancient coat of arms belonging to the reign of Queen Elizabeth. In Old Street are to be seen more than one fine old timber house with beautifully constructed interiors, probably not now to be equalled. The "Feathers Hotel" too is a fine example of a timbered structure.

In order that adequate arrangements may be made by the Committee for the comfort of the party, it is important that the number of the company should be known by July 15th at the very latest. Applications should be made to Mr. Richard Richards, Secretary, "Mount Eveswell," Eveswell Park, Maindee, Newport, Mon.

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*The Castles and Walled Towns of England. By Alfred Harvey. With forty-six illustrations. London: Methuen and Co., Ltd., 36, Essex Street, W.C. Pages xx.—276, 9ins. by 6ins, 7s. 6d. net.

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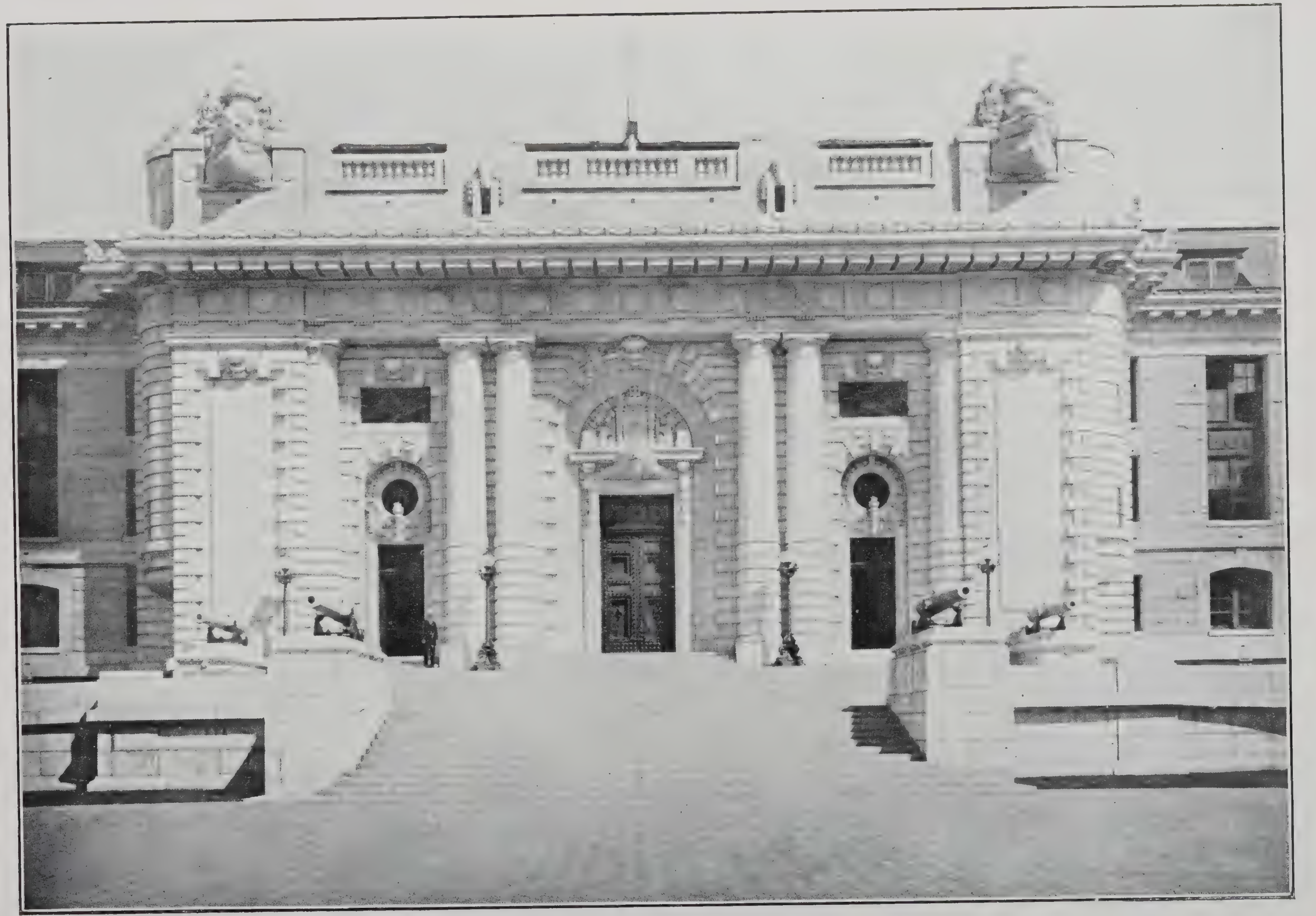
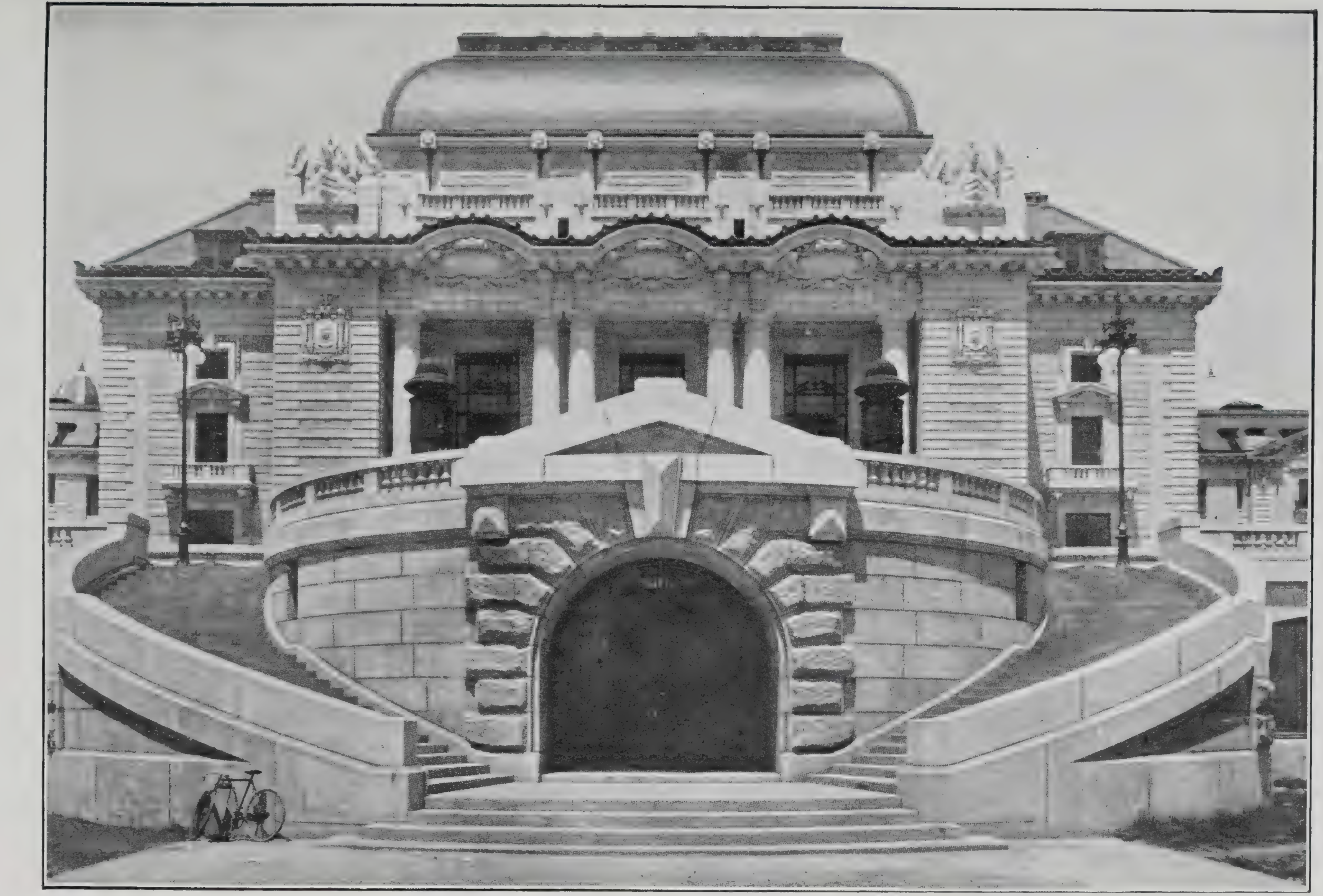
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, July 12th,* 1911.



Main Entrance, from Terrace on Campus Park.



Central Pavilion, and Steps to Terrace.

BANCROFT HALL, UNITED STATES NAVAL ACADEMY, ANNAPOLIS, MD. ERNEST FLAGG, ARCHITECT.

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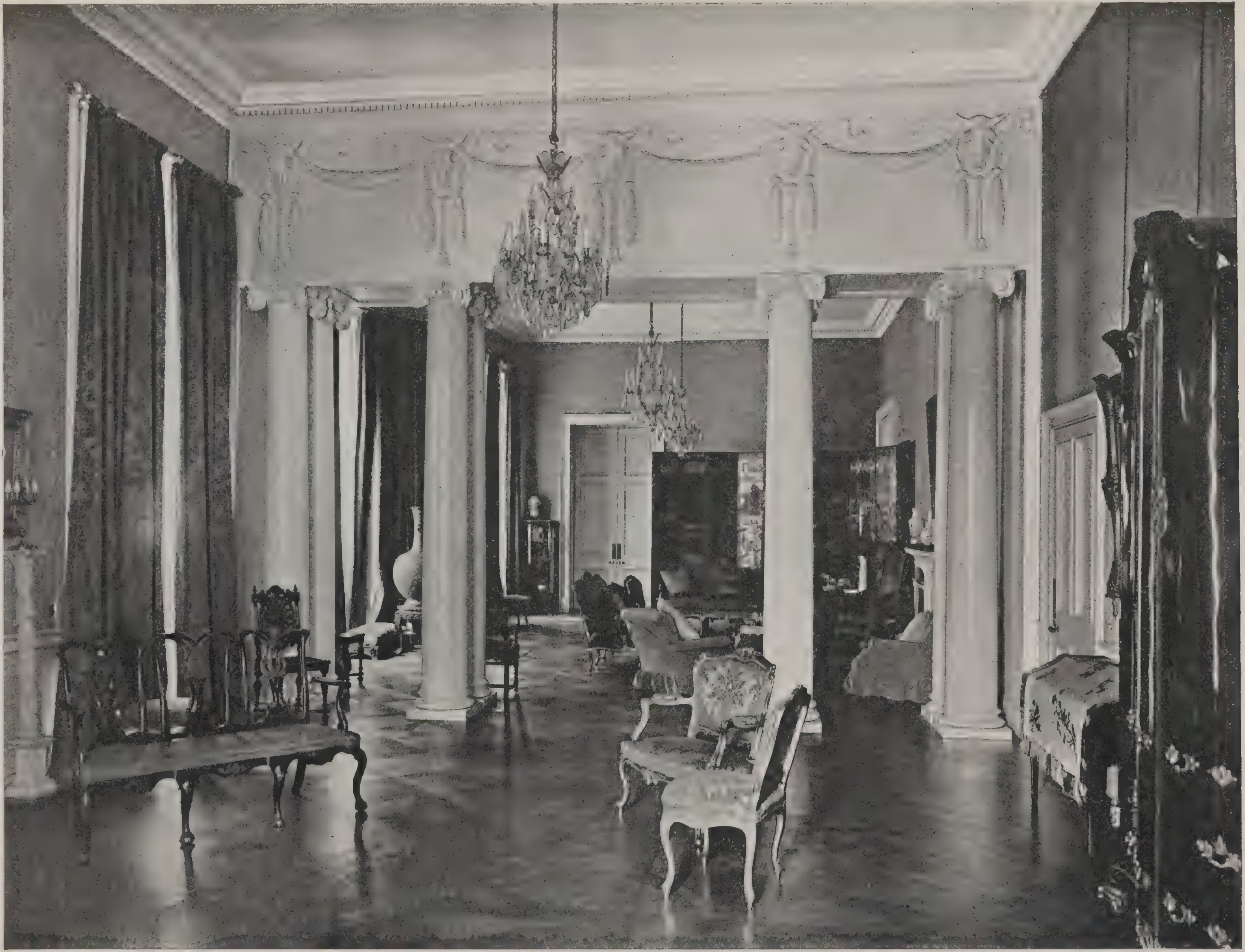
THE ARCHITECTS' &
BUILDERS' JOURNAL.

WEDNESDAY,
JULY 12th, 1911.

Volume XXXIV. No. 859.

In the fourteenth century, from which this window dates, Chipping Campden was one of the most important towns in the West of England, being not only the mart for the whole of the Cotswold wool, but for that from a good portion of Wales as well. Chief of the wool staplers of England at this time was William Grevel, whose house in the High Street is shown in part by the above illustration.

BAY WINDOW TO GREVEL HOUSE, CHIPPING CAMPDEN,
GLOUCESTERSHIRE.



This house was bought recently by Mr. Saxton Noble, for whom the interior was rearranged and entirely redecorated under the direction of Professor Reginald Blomfield, A.R.A. On the first or drawing-room floor two rooms were thrown into one to form the concert-room shown on this page, but in taking down the wall it was found that an old girder carrying the wall above was built in, and for structural reasons it was decided to leave it in position and to alter the design to suit it. This explains the unusual proportions of the frieze with bucrania above the Ionic columns,

CONCERT ROOM AT KENT HOUSE, KNIGHTSBRIDGE, LONDON, S.W. PROFESSOR REGINALD BLOMFIELD., A.R.A., F.R.I.B.A., ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

JULY 12th, 1911. CAXTON HOUSE, WESTMINSTER. VOLUME 34. No. 859.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

A Folio on Town Planning.

IF the art of Town-Planning does not prosper and develop, it will not be for want of literature on the subject. We have had two or three important quartos on Town-Planning already, besides the voluminous and very useful Report of the recent Conference, and we have now an imposing and much-illustrated folio volume, a publication *de luxe*, which seeks to represent the theory and practice of Town-Planning in all its bearings.*

The author, Mr. Mawson, is known chiefly as a landscape gardener, and is, we see by the title-page, lecturer on "Landscape Design" (whatever that may be) at the University of Liverpool. Our own opinion is that there is no such thing as landscape design; the whole idea is an illusion handed down from the days when artificial woods and landslips, and sham rivers, were considered to be the proper and essential out-works of a country house of the first importance. There is "garden design," no doubt, but that is quite a different thing; it is the artificial laying-out of an enclosure which does not pretend to be anything else but artificial. "Landscape design," if it means anything at all, means the attempt at producing the artificial picturesque in such a way that it should appear to be natural; an attempt which is bound to fail; an idea which we really thought had been by this time so entirely discredited that it would have been imprudent even to remind readers of it on the title-page of a book. And certainly it is not to the landscape gardener, or by whatever title his profession is to be distinguished, that we should look for the best advice on town-planning, which is emphatically an architect's business.

If multiplication of words, however, can do anything to elucidate the subject, Mr. Mawson may claim the right to attention, for a more verbose book we have seldom encountered; and it seems doubtful whether the author has always himself any distinct idea as to the meaning underlying his rhetorical paragraphs. What does he mean, for instance, by the "ideal" and the "practical" on page 4 of the Introductory Chapter on "The Place of the Ideal in Civic Art"? We are told that "those who relegate everything pertaining to civic "life exclusively to the realm of the practical are making a "mistake. . . . The ideal in civic life is imagined by such people "to be nothing more or less than the graceful and imaginary "delineation on paper of the model borough, with all its "situations planned, pictured and prearranged in the mind of "the designer—an idealistic scheme which could never take "practical shape. Nothing could be further from the truth. "If we are to realise the greatest practical good, the ideal "must be ever before us," etc. But he has in the same breath condemned the man who has an ideal scheme, for that is what it comes to; nor does it follow that an ideal scheme put on paper is therefore impossible to be carried out. There have been ideal schemes on paper which were unpractical; there have been others which were quite practical; and, practical or not, a scheme has to be put on paper before anything can be done towards its carrying out, which in most cases is necessarily slow and gradual. In fact, one of the great faults in regard to London has been that we never have put down on paper any comprehensive scheme, to which local improvements should be subordinate. It is a foolish cry to talk about schemes being unpractical merely because they are "on paper" in the first instance. Or what are we to say to this kind of writing?—

> "It is difficult to define this moving spirit, this haunting presence, which baffles description, but which enters into all beautiful, truthful, and co-ordinated design. Without it we may indeed succeed in securing the grand external, in driving wide avenues and boulevards through narrowed-up selfishness and squalor; we may incorporate within the city gardens and parks of luxury and ease, all, perhaps, apportioned with mathematical precision and replete with all the luxuries of modern life, yet if a high ideal be not evident in their design, purpose and arrangement, all will crumble into dust, and all the temples, fanes, and palaces vanish like wayfarers' tents."

We presume this is what the author thinks fine and impressive writing; it is what Americans would define as "tall talk"; we should call it mere inflation; and there is a great deal more of the same kind.

When the author can get rid of this tendency to fine writing, his suggestions as to the points of importance to be considered in connection with town improvements are rational enough, though they do not embody anything that has not already been said by others. Centralisation of the town's municipal and commercial activities; adjustment of its plan to the contours of the site (a point sometimes overlooked in planning on paper); convenience and economy of traffic lines; perfect hygienic conditions—these make the outlines of a good programme. We quite approve also of the recommendation that on all sites which are not exceptionally steep the main arteries ought to be straight, though "punctuated" with squares or open spaces. We do not say that curved roads are not desirable occasionally and at special points; but they must be geometric curves, not irregular bendings, which always convey the impression of uncertainty of purpose in the planning. We doubt if it is true that a "fortuitous chance assortment" always surpasses in effect a planned arrangement. The author cites the well-known splendid view of Durham from the river; here it is the site itself that makes the effect; but after all, it was not by chance that Durham Cathedral was built on the brow of the hill, or Lincoln on the top of a hill; the builders must have known what they were doing in both cases; in each case they had a splendid site for effect, and placed the building so as to make the most of it. On a flat site great architectural effects have to be deliberately planned; the site affords no suggestion for them. The flat site of Versailles was deliberately chosen for this very reason by Louis XIV.; the château and park were to show what art could do on an unpromising and unsuggestive site.

The author rightly draws attention to the importance attached to vista in continental cities, in contrast to our almost

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*Civil Art: Studies in Town Planning, Parks, Boulevards, and Open Spaces. By Thomas Mawson, Hon. A.R.I.B.A., London; B. T. Batsford; 1911. 50s.

THE BELVEDERE AND GARDENS, VIENNA.

(From "Civic Art," by Thomas Mawson, Hon. A.R.I.B.A., published by B. T. Batsford.)

entire neglect of it in England. Some attempt has been made by English critics recently to decry this love of axial effect, in Paris especially, as dull and fatiguing to the eye, too formal, etc.; but we think the criticism a mistake. Dignity is the proper architectural quality of a large city, of a capital city especially, and it is by this axial laying out that it is chiefly to be attained. London undoubtedly has many points of picturesque beauty, but it wants purpose and dignity in its street lines and in the placing of its great buildings; it is picturesque rather than architectural. There is nothing in London to compare in dignity of architectural effect with the two great vistas of Paris, that from the Tuileries to the Arc de Triomphe, and that between the two art palaces and over the Alexandre III. bridge, with the Invalides dome centrally at the end of the vista. In London that placing of a domed building axially with a street vista, or the street vista axial with the dome, is, as we have lately seen, regarded as of little consequence; its consequence has had to be established at the point of the sword; nor do we know yet whether we shall really obtain it.

As the author observes, in our older towns and cities five-sixths of the town is in general already planned for us, and the object will be to weave the new and the old into a harmonious composition; and he directs attention to the manner in which Wren endeavoured to do this in his admirable plan for the rebuilding and re-arrangement of London, arranging the street lines so as to give a new effect of position to buildings of importance which had escaped the fire. In undertaking the improvement of an existing town (which is the only chance that the modern town-planner mostly has), one of the most fascinating portions of the task may probably lie in this opportunity of giving new effect to an old and meritorious building by remodelling its surroundings and the approaches to it.

The author seems to be quite satisfied with Trafalgar Square and its commonplace fountains, and apparently thinks that nothing could be better for the position. It is to be hoped, however, that there are not many persons among our readers who would agree with him. In the recommendation that more attention might be given in our cities to wall fountains we quite concur; we mean not mere drinking-fountains, but decorative fountains. They can be introduced in sites where there is not room for a separate-standing fountain, and the design of the architectural framework of such a fountain would give opportunities for interesting work in architectural detail. In mentioning gas standards (or what are now mostly electric light standards) the author seems to take those on the Thames Embankment (with the twisted dolphins) as deserving of admiration, but says nothing of Rennie's (or Cockerell's?) fine standards on Waterloo Bridge, now fortunately restored to their original position.

The book is of value for its illustrations, which are numerous and generally good, only one is somewhat puzzled as t the real authorship of some of the original designs, many o which are very good. We read below the drawing, in variou instances, the name of "T. H. Mawson, Hon. A.R.I.B.A.," but within the margin of the drawing itself we read "Rober Atkinson," by whom obviously therefore the drawing is made In such cases it is not easy to come to a definite conclusion a to the responsibility for the general effect of the design a published. But co-operation between designer and architect though common enough, nearly always creates this kind o confusion. The Lodge entrance at Rivington Pike (Fig 174), which bears the author's name only, shows a feeling fo character in a very simple class of erection.

Generally speaking, the views as to problems of town-planning contained in the book appear to be sound, when one ca disentangle them from the superfluous verbiage in which the are conveyed; but they might have been expressed in half th space which the literary portion of the book occupies. As matters of detail, we might point out that the eminence outside Edinburgh, on which the sham Greek monuments are erected, is "Calton Hill," not "Colton Hill," and that a great French sculptor whose works are referred to is not "Dalau," but "Dalou."

Trials of Road Materials.

A PAMPHLET that has just been published by Messrs. Waterlow and Sons, Ltd., London Wall, at 1s. 6d., gives particulars of the trials of road materials that are being carried out by the Kent County Council under arrangement with the Road Board. The road chosen is the main London-Maidstone road between New Eltham and Sidcup, which can be easily reached by motor-omnibus or by train from Charing Cross or Cannon Street to New Eltham or Sidcup. One or two of the lengths have already been laid, and others are in progress. The various trial lengths of roadway will be carefully watched, and measurements frequently taken. Complete records will be kept, not only as regards weather, temperature, etc., but also in regard to every detail of construction; and the Advisory Engineering Committee of the Road Board will report on the results ascertained. Altogether 23 materials are undergoing trial, namely:—Ordinary water-bound macadam, ordinary water-bound macadam surface arred by painting, single-pitch grouted macadam (Road Board specification No. 3), double-pitch grouted macadam Road Board specification No. 4), Durax armoured paving, macadam treated with Plascom, Cormastik, tar macadam Chittenden and Simmons), tar slag macadam (Constable, Hart, and Co., Ltd.), "Tarmac," Roadoleum asphalte, Rocmac," tar macadam (Taroads Syndicate), tar macadam Messrs. Bristowe and Co.), tar grouting (Messrs. Bristowe nd Co.), Roadamant, Lithomac asphalte, Pitchmac, natural sphalte matrix, asphalte macadam (Val de Travers Asphalte Company, Ltd.), Trinidad asphalte macadam 3in. coating Trinidad Lake Asphalte Company), and Trinidad asphalte macadam (1in. wearing surface on 3in. asphalte concrete). he report of the advisory committee of the Road Board on he results will be awaited with considerable interest, not only y those who are directly concerned in the construction and aintenance of roads under the extraordinary conditions that have multiplied so rapidly within recent years, but by architects, for whom those conditions have created certain new oblems and a considerable amount of worry and vexation.

Piccadilly Circus Improvement Scheme.

LAST week we recorded a difference that had arisen between the Westminster City Council and the London County Council with regard to the details of the pro- sed Piccadilly Circus improvement. The Office of Woods d Forests supported the L.C.C. view, approving the scheme bmitted by Mr. John Murray, F.R.I.B.A., of which par- ulars were given last week. Westminster City Council, wever, at their April meeting, adopted an alternative pro- sal to pull down the property lying between Regent Street d Glasshouse Street for the widening of the latter thorough- f e. At the City Council meeting held last week, the Im- ovements Committee recommended that the Council adhere that resolution. Councillor R. W. Granville-Smith moved t the Council revoke its former resolution, and adopt the lding lines originally jointly agreed upon at a conference representatives of the City Council, London County Coun- and the Office of Woods. He asked the Council not to e up a dog in the manger policy and block a great municipal provement. The *crux* of the business was Swan and gar's corner, and here were the Government offering them ortion of land in front of that corner by putting back those mises 10ft. or 12ft. Councillor J. M. Gatti seconded.

The Improvements Committee's proposal is to set back the projecting corner of Glasshouse Street and Regent Street a distance of 45ft., and to widen Glasshouse Street to 44ft. 3in. The Committee still adhered to their proposal, "more especially in view of the proposed erection at an early date of a large hotel on the north side of Glasshouse Street." Councillor Granville-Smith's rescinding resolution was carried by a large majority, the Council thus approving of the joint scheme. The City Council are to be congratulated on taking so sensible and so courageous a course; for the occasions on which common sense prevails over obstinate persistence in a resolved course are unfortunately so rare as to deserve the compliment which is here in all sincerity tendered. It is a wise Council that alters its opinions on due cause being shown.

The Style Neo-Grec.

A MOST interesting article under this head appears in the July issue of *The Architectural Review*. The author, Mr. A. E. Richardson, is an able exponent of the style which he believes to be the surest basis for modern architecture of a truly monumental character.

The year 1830 witnessed the birth of the style neo-Grec, which aimed at the introduction into modern design of the finesse of Greek art, its elasticity, its tractability, and its delicacy, but not its absolute forms. Professor C. R. Cockerell represented England in this new movement; Schinkel, Leo von Kleuze and Stühler stood for Germany; while the dominant council remained with France, whose able sons Duc, Duban, Labrouste, and Hittorf developed the fresh Greek style which acepted Greek, Roman, and Italian forms, blended them with national characteristics, and gave a fresh expression to the various conceptions, which are still distinguished by their purity.

Professor Cockerell's efforts in this direction bade fair to place English architecture on a level with the finest the world had yet seen. Schinkel's Museum at Berlin, with its mighty loggia of Ionic columns, may or may not have inspired St. George's Hall at Liverpool. Duc's appropriate remodelling of the Palais de Justice fronting the Place Dauphin in Paris marked the high-water level of the style (in the opinion of Mr. Phené Spiers this latter building is one of the best of modern Classic works). Contemporaneously with the beautiful front of the Palais de Justice were erecting the Colonne de Juillet by Duc—one of the most elegant of modern columns; the original and appropriate Library of Ste. Geneviève by Labrouste, a grand astylar treatment boldly proclaiming its purpose as a modern storehouse of knowlege; the Library of the Ecole des Beaux-Arts by Duban, the exterior of which is as good as a hundred lectures on design; and coming down to more recent times, we have to record the grandiose Opera House by Garnier, the powerful façade of the faculty of Medicine, the refined interior of the National Library, the New Sorbonne by Nénot, and various works of superlative merit by Jean Louis Pascal.

The neo-Grec style, Mr. Richardson observes, is the epitome of design, its interest a reflection of the tireless mind of the designer, who, having obtained a great many ideas bearing on his subject, melts these very ideas in the crucible of his imagination, refining them again and again until the minted metal gleams refulgent. "All material is the same to such a one. By these means, and these alone, is original design possible. The greatest masters of the English school of painting approached their subjects in this spirit; the architects did the same. Spontaneous originality was curbed, restraint was exercised, and to-day their works are our wonder and admiration. . . .

"Professor Cockerell paid the greatest respect to the works of Sir Christopher Wren, but he knew better than to repeat the classical meretricious ornaments of this master. The panelling to the library at the Fitzwilliam Museum, Cambridge, is but Cockerell's version of Renaissance panelling with Greek detail; the lantern over the main staircase in the same building is but a version of the lantern at Ashburnham House treated on a more knowledgeable and extended scale; while at Oxford, in the Taylorian Museum, we see still another example of Cockerell's infusion of new spirit into old features."

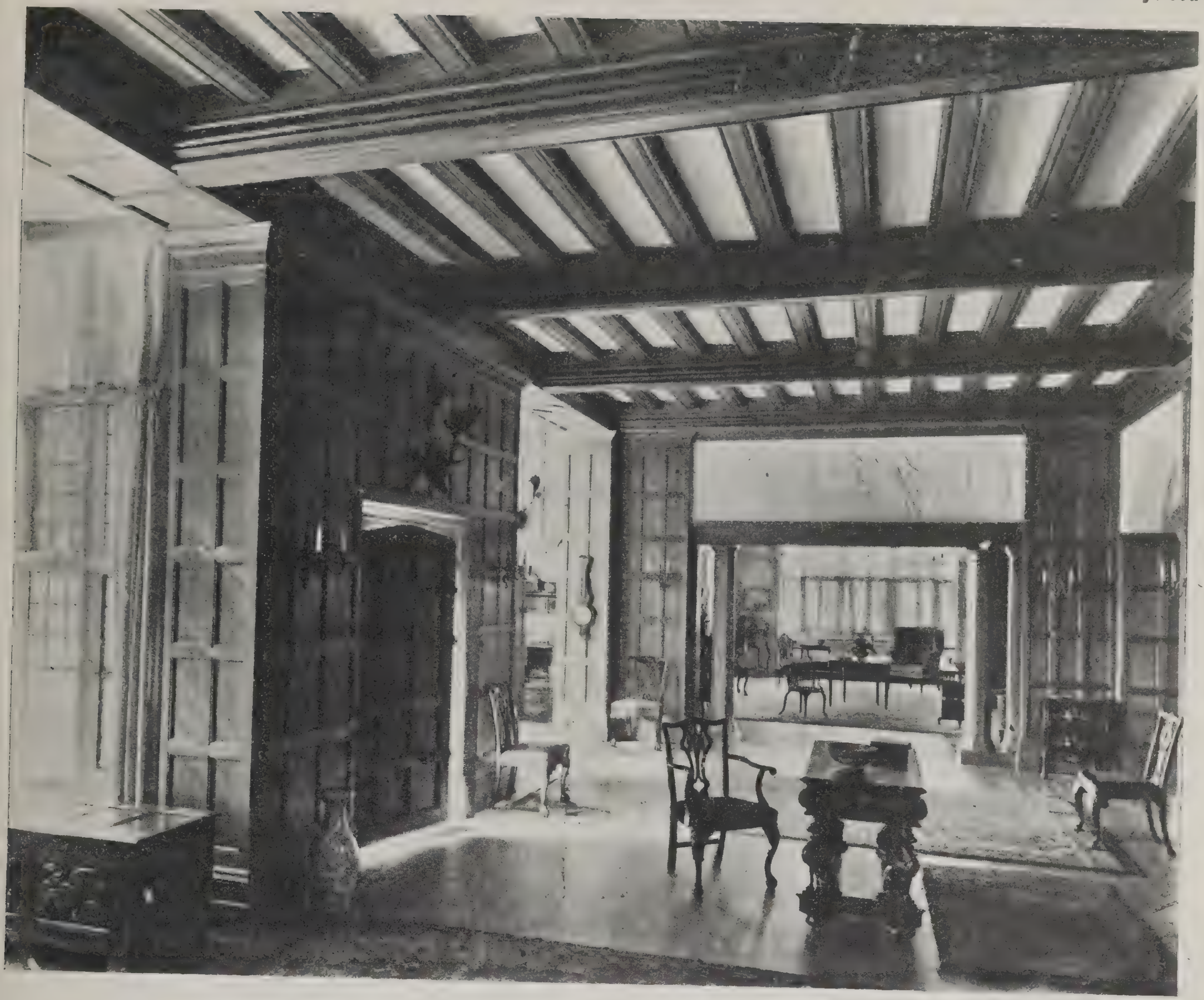
Other features of the July issue include illustrated articles on Wolvesey Palace, Winchester, the Ford Abbey tapestries, Sir William Lever's collection of furniture, and the design of Sundials; while current architecture is represented by a number of illustrations of the new building on Aldwych erected for the General Accident, Fire, and Life Assurance Corporation from designs by Mr. J. J. Burnet, A.R.S.A., F.R.I.B.A.

The Bridge and the Cathedral.

IN the last issue of the Institute *Journal*, Mr. W. Henry White writes a letter on this subject, accompanied by two plans, which seems to call for some remark. The main point of his letter, which is a practical and useful contribution to the discussion, is to show that the Corporation line for the bridge, which has been laid out on purely utilitarian considerations, has overshot its mark in its almost ostentatious ignoring of St. Paul's Cathedral as an object in the vista, and that by directing the new route to the south-east corner of the churchyard the traffic along it would be directed into the double stream of the traffic through the churchyard from east to west and from west to east, "and as this position also receives the north-going traffic, further congestion is bound to result." This seems a perfectly logical conclusion; and as the whole claim of the Corporation for their line of route was for its superiority of traffic convenience, it is certainly sport to see the engineers of this utilitarian scheme hoist with their own petard. But Mr. White's own plans we do not like so much. For the division of the traffic, immediately south of the cathedral, they are very good; but the main line of his road, in both plans, shows a divergence from the Corporation line of route which is of no use, because it is nearly right but not quite. At the north end of the road, where it opens out into the proposed open space, the centre line is supposed to take a slight turn so as to be at right angles to the axis of the cathedral and central with the dome; but all the half mile of straight road (including the bridge) south of this point is a little out of the axis line, so that all the way up this approach St. Paul's would appear crooked to the road; and if a vista of this kind is a little out of axis, it may just as well be entirely out; in fact, to have it very near right and not quite is almost making matters worse, as it looks as if the road had been intended to be axial and had been set out wrong. The plan gets the slight disadvantage of having the bridge skew to the river (for that is a certain disadvantage) without getting the advantage of having it axial to the cathedral; so that for purposes of architectural effect it is really worse than the Corporation scheme instead of better. It is really surprising how many architects there are who apparently cannot appreciate a point of this kind.

A Journalist's View of Architecture.

WHEN an ultra-popular London weekly newspaper, which is not specially noted for the attention it pays to the arts, devotes a whole column to "Architectural Shams," the mere fact is worth chronicling, as being presumably significant of the changed attitude of the public towards such matters. That the writer adopts a rather severely pessimistic tone is not surprising, since it is always so much more easy to blame than to praise, and because no doubt the objects that invite censure greatly predominate. The writer is careful to assume at the outset an unassailable position. "How rare it is," he exclaims, 'to come across a really fine public building or monument!" He steps at once on to debatable territory, however, with the uncompromising assertion that "Most of the great public buildings which have been erected in modern times in London are in the worst possible taste." That is indeed a hard saying, and, we think, incapable of proof; for "great public buildings" that are bad in the superlative degree are really almost as rare as those that can be justly described as "really fine." It is a matter in which extremes meet in an equality of scarceness. To say that the condemnation is too sweeping is not to deny that it has a certain measure of justification; but overstatement of a truth is apt to discredit it. The critic rides full tilt against what is sometimes, rightly or wrongly, known as "scholarly design," when he asserts that "The aim of the architect has been not to frame his design so as to make the best use of the material and so as to provide the best possible accommodation for the purpose for which the building is wanted, but rather he has used his opportunity as a means of showing off his knowledge of the ornamental designs which have been used in foreign countries in other ages, under other conditions, and for other purposes." Here the writer is, perhaps unconsciously, throwing in his lot with one of the two great rival schools of thought in architecture; and he seems to be paraphrasing, with some licence in the process, certain observations that have been recently made respecting "Wren's box of bricks." In doing so, he seems to illustrate the dangers of misinterpretation and perversion to which any particularly striking proposition is always more or less liable. He applies the idea in this way: "We commission an architect to design a War Office to accommodate so many thousand clerks and officials. He seizes the opportunity to inset in the wall a whole lot of massive pillars supporting a heavy cornice. These pillars serve no useful purpose. They darken the windows. They add enormously to the cost of the building. The only reason for having them is that more than 2,000 years ago the Greeks used to build in front of their temples a kind of open porch supported on graceful pillars. Nothing but pedantic classicism dictated these pillars on the War Office." It is hardly necessary to observe that the reason for the War Office pillars is much less remote than the writer would have us believe, and he need not have gone to ancient Greece for it, because it happens to exist next door to the War Office. Moreover, what he brands pedantry may with at least equal force be called propriety. With the War Office the critic contrasts the Scotland Yard building by Mr. Norman Shaw, which he regards as "a building which is a delight and a joy to look upon." He is entitled to that view, and is by no means alone in it; yet the comparison is rather inept, and revives an old controversy that cannot be profitably resumed. The critic even falls foul of the dome of St. Paul's; "The great dome which looks so imposing is a bogus piece of scaffolding covered with lead." For the sweet uses of journalistic special-pleading the dome may admit of that description, which is nevertheless grotesquely unfair. Also "the bold front of the Cathedral, above the porch, is a mere blank wall, an empty shell with nothing behind it." He adds that "A lady with false hai and a padded bust may doubtless be described as a work o art, but she does not belong to the higher order; and neithe does a cathedral with a false dome and a sham front." Th critic is disposed to be "smart" at the expense of fairness In resuscitating these very trite objections, he is obviously ben on making clever points rather than on stating the whole o the argument. He ignores the wonderful constructional ingenuity of the dome, as well as all reference to what has bee said in justification of the screen wall, and is thus guilty o one of the commonest devices of mere journalism, in whic everything that interferes with positive and dogmatic poin making is ruthlessly brushed aside. This very typic piece of journalism confirms the natural scepticism as to th desirability of dealing with such matters in the lay Press.



This hall is panelled out in oak, with fireplace and beamed ceiling. At one side is the drawing-room, over the entrance to which is a plaster panel with figures in low relief. The house is two miles from the centre of Leicester, on the London Road.

"THE KNOLL," LEICESTER. THE HALL, LOOKING TOWARDS DRAWING-ROOM. W. H. BIDLAKE, M.A., ARCHITECT.

"Jest and Youthful Jollity."

AS a proposition for discussion by the Architectural Association Camera, Sketch, and Debate Club, "That Socialism means the extinction of Fine Architecture" s rich in promise. It reeks of *sæva indignatio*, and seems be in the highest degree provocative of perfervid oratory. he proposer, however, whose paper has been published, did ot rise to the greatness of his occasion. He did not excite is opponents to frenzy, but caused them to "chortle in their y." Having vainly "wandered through London for a day earching for a medical man who would certify him as unfit" carry out the task, he appears to have chosen—weakly, erhaps, but perhaps wisely—the line of least resistance. pparently he preferred to be frivolous by intention rather an run any risk of involuntary absurdity, and therefore he ok on a general tone of genial banter—a method that at all ents gets rid of pretentiousness. Of course there was here d there a grain of truth among the chaff. His main gument, so far as this can be discerned amidst a mass of relevancies, which are diverting in the primitive as well as the derived sense, is directed against the municipalisation architecture. "This," he says, lapsing momentarily into riousness, "is the thin end of the wedge of Socialism as it ects our own art. . . The greatest architect who ever isted, if at the head of an official department, has too much ganisation and routine duty to attend to to exercise his wers of design. His assistants will know they are not ely to get full credit for what they may do, and the mass of them will relapse into doing a moderate day's work for a moderate day's pay." He adds, "And the race must benefit by individual attainment. The footprints of the great are the beacons for the many." Perhaps the bull is intentional. It is probably a reminiscence of those equally curious and conspicuous footprints which testify to Longfellow's lack of humour—"Footprints which perchance another, Sailing o'er Life's solemn main—Some forlorn and weary brother—Seeing may take heart again": which has been repeatedly and superfluously denounced as an impossible proposition, and, resembling in this respect most of the A.A. gentleman's *obiter dicta,* does not seem to have very much bearing on the argument. But there can be no doubt as to the robust individualism of this concluding passage: "I would like to suggest in conclusion that the Association should inaugurate a movement for preserving full opportunities for every one of you to design with beauty and build with truth, and that there are many small efforts you can make to bring this about, such as to procure the abolition of the London Building Act, and also to procure public funds to enable every one of your members to bridge the Thames in his own way, the only condition being that every bridge should have an axial line dominated by the dome of St. Paul's." On the whole, there seems to be some reason to share the author's regret at his failure to find a medical man who would "certify him"; though in that case we should have missed an exhilirating example of jest in earnest; and an occasional outburst of "excellent fooling" is as a well-spring in a parched land.

THE PALACE OF THE TUILERIES.

THE palace of the Tuileries, of which only the memory now remains, was often associated with events fatal alike to the aspirations of monarchy and empire. It is said that none of the princes born within its precincts ever succeeded to the crown of France, and it is at least certain that, in modern times, of those who first saw the light there the son of the great Napoleon (the King of Rome), the heirs of the Bourbon and Orleans dynasties (the Count de Chambord and the Count de Paris), and the son of Napoleon III. (the Prince Imperial) were all exiled from France and found death far from their native country.

The portion of the Tuileries garden which faces the Rue des Tuileries now occupies the site of the palace which was built upon land formerly covered with tile-kilns (*tuileries*). The history of the Tuileries commences in 1518, when Francis I. purchased a house that had been erected in the neighbourhood of the old tile-kilns and presented it to his mother Louise de Savoy. In 1525 this princess gave the building, known as the Hôtel des Tuileries, to one Jean Tiercelin, maître d'hôtel to the Dauphin. The property subsequently reverted to Catherine de Medici, who ordered the house to be demolished, and commenced, in 1564, the erection of a new royal palace to replace her former residence of *Les Tournelles*, which she is said to have had destroyed, in one of her numerous bits of superstition, because her husband, Henry II., had died there from the effects of the lance-thrust he accidentally received from Montgomery. The designs for the new palace were prepared by Philibert Delorme and J. Bullant, under whose directions the central pavilion, the adjoining wings, and the low pavilions which terminated them, were completed.

Here Catherine's work stopped. She is said to have become alarmed by a prediction of her astrologers to the effect that she would die at Saint Germain, and as the new palace was situated in the parish of Saint Germain l'Auxerrois, she abandoned it in terror, and proceeded to build for herself another residence, the Hôtel de Soissons. Even as a building the Tuileries was unfortunate. The original plans of Delorme and Bullant were modified, times without number, by successive kings and architects, and the palace was very seldom used, as a royal residence, until after its enlargement, by Ducerceau and Dupérac, under Henry IV., who commenced the extension of the frontage to the Rue des Tuileries and erected the lofty end pavilions and the long gallery fronting the quay, the latter extension being completed by Louis XIII., who selected the Tuileries as a place of residence during his sojourns in the capital. During his minority Louis XIV. resided chiefly at the Palais Royal, and the Tuileries became the abode first of Mlle. de Montpensier, *la grande Mademoiselle*, and afterwards of Philip of Orleans; but until the King finally forsook the capital for Versailles, he spent some years at the Tuileries and during that time he entrusted his architect, Levau, with the completion of the palace. Levau destroyed much of his predecessor's work, particularly in the interior of the building, where the original decorations of Bunel and Pouce were demolished, allegorical designs, by Mignard and other artists, symbolical of the glory of the young King, being substituted. The great paved square, formerly a delightful garden with marble fountains, became known as the Place du Carrousel from the superb military fêtes given there by the King, in 1662, at which three queens, viz., Maria Theresa, Anne of Austria, and Henrietta Maria, widow of Charles I. of England, distributed the prizes.

After Louis XIV. removed his court to Versailles the palace became the residence of the Grand Dauphin (who never reigned), but it was probably owing to the immense expenditure entailed by the erection of the palace of Versailles and the châteaux of Trianon, Marly, Clagny, and other structures that the King's plan of uniting the palace to the Louvre, by a range of buildings facing the Rue de Rivoli, was neither carried out by himself nor by his immediate successors. The Regent Duke of Orleans resided at the Tuileries during the minority of Louis. XV., but from that period until Louis XVI. was forced to return to the palace, it was solely occupied by the families of persons officially attached to the Court. The Tuileries was the scene of many stirring scenes during the course of the first revolution. It was first entered by the mob on the 20th June, 1792, and on August 10th of the same year it was attacked and taken, the Swiss Guards massacred, and Louis and his family quitted it, never to return. Later the Convention installed itself in the palace theatre, and branches of the mob administration found quarters in various parts of the building, and it was to the Pavillon de Flore (dating from the time of Henry IV.), the meeting place of the famous Committee of Public Safety, that Robespierre, with a shattered jaw, was carried from the Hôtel de Ville on the eve of his execution.

Under the Directory, which occupied the Palais du Luxembourg, the Legislature met at the Tuileries; but in 1800 Bonaparte, as First Consul of the Republic, and his colleague Lebrun took up their residence at the palace. Here, ten years later, in the presence of her children, Eugène de Beauharnais and Hortense Queen of Holland, the unhappy Josephine was compelled to sign her own sentence of divorce. Napoleon re-established the palace theatre, built a meeting hall for the Council of State, and commenced connecting the Tuileries, on the Rue de Rivoli side, with the Louvre. On the fall of the Empire, Maria Louise fled from the Tuileries with the King of Rome to Blois, and soon afterwards the palace was occupied by Louis XVIII., who, in his turn, had to quit it hastily on the return of Napoleon from Elba. When Louis XVIII. was again seated upon the throne of his fathers he resided at the Tuileries until his death, and he was the only King of France who died there. During his reign, and that of his successor, Charles X., the work of completing the palace was resumed, and after the revolution of 1830, when the Tuileries was attacked and taken by the people, Louis Philippe made it his residence until 1848, when it was again overrun by the mob and many of the rooms sacked and damaged. By a decree of the Provisional Government of that year, which, however, was never put into execution, the palace was to be thenceforth transformed into an asylum for invalid workmen; and during, and after, the subsequent insurrection of June, 1848, it became a hospital for the wounded. In 1849 the Tuileries was first used for the annual exhibition of paintings. But the old walls of Catherine de Medici were destined to witness many scenes of regal splendour and magnificence when, in 1852, the Tuileries fell into the possession of Napoleon III.

Although much still remained to be done, a whole army of artists and decorators had been for months past busily engaged in restoring and beautifying the erstwhile neglected and decaying palace, and, naturally enough, a considerable amoun of attention had been given to the restoration of the stat apartments which occupied the first floor of the building. Of this magnificent suite of rooms, the *Antichambre de l Chapelle* was placed between the Pavillon de Marsan an the Pavillon de l'Horloge. It contained, on the left, th *Foyer de Théâtre*, through which access was gained to th Theatre, a fine saloon accommodating 800 persons, which wa enriched with an elaborately designed vaulted ceiling, supported by an arcade of Ionic columns. The door on th right of the antechamber led to the *Salle des Travées*, decorated with gilded arabesques upon a white ground and communicating with the state pew of the Chapel. Adjoining th *Salle de Travées* was the *Escalier d'Honneur* which extende to the *Pavillon de l'Horloge*, and was embellished with loft Corinthian columns and balustrades of bronze and polishe steel. From the antechamber of the staircase access wa obtained to the splendid hall often used as a ball-room, called the *Salle de la Paix*. It consisted of a stately apartment 140ft. long by 35ft. broad, which received its light from ten large casement windows overlooking the court of the Tuileries. Its richly decorated ceiling was supported by coupled Ionic columns with gilded capitals and bases. Over the mantelpiece was an equestrian portrait of the new emperor, and two colossal chandeliers of crystal and gilt bronze were placed at the entrance from the antechamber, while at the opposite end was a silver statue of Peace, by Chaudet, flanked by marble columns supporting antique busts. The *Salle des Maréchaux* occupied the two upper storeys of the *Pavillon de l'Horloge*. It had a richly sculptured and painted vaulted ceiling, at the springing of which was a gilded balcony, supported by a boldly projecting cornice and by huge gilded caryatides copied from those by Jean Goujon in the Louvre. The names of the great battles fought under the first Empire were inscribed on the walls, and below were the busts of the many distinguished generals and naval commanders of that period, whilst portraits of Napoleon's famous marshals still further adorned the room. The *Salon Blanc*, the guard room of Louis XIV.'s time, was decorated with the usual gold on a white ground. In the *Salon d'Apollon* there was a fine painting, by Mignard, of Apollo and the Muses, and its ceiling, by Loyr, represented Apollo ushering in the day. The *Salle du Trône* was entered from the *Salon d'Apollon*. At its further end was the new Emperor's throne surmounted by a canopy of crimson velvet with the letter N in small medallions, the drapery being studded with the golden bees of the Bonapartes and bordered with laurel leaves. The throne stood upon a dais approached by three semicircular steps, and on the velvet drapery behind it was an escutcheon with the imperial eagle encompassed by a wreath and surmounted by a helmet and the imperial crown.

Over the mantelpiece of the *Salon Louis XIV.* was a portrait, by Mignard, of Anne of Austria and her children; between the windows, one of Louis XIV. in his 70th year, and opposite the latter portrait was a painting of the *Grand Monarque* presenting his grandson (Philip V.) to the grandees of Spain. The *Galerie de Diane*, the last of the suite of state rooms, and a fine apartment of the time of Louis XIII. was used on special occasions as a dining hall. The private apartments were of great interest by reason of their association with the lives of Maria Antoinette and Napoleon I. Externally the palace presented a very imposing appearance. Its façade, which was considerably over 1,000ft. in length, was dominated by a central pavilion two stories high, surmounted by an attic and a cupola. The buildings on each side of this central feature (the Pavillon de l'Horloge) consisted originally of long arcaded galleries placed north and south, and forming terraces at the level of the first floor, but in the time of Napoleon III. only one of these terraces remained, the northern gallery having been replaced in the reign of Louis XIV. by a grand staircase. During the siege of Paris, following the fall of the second Empire in 1871, the palace of the Tuileries was chiefly employed for ambulance purposes, but when, a few weeks later, the army of Versailles, under Marshal MacMahon, was advancing on Paris, "General" Bergeret, one of the chief leaders of the Commune, installed himself there. Under his direction the approaches to the Tuileries were defended by hastily constructed barricades and powerful batteries, but as, in the meantime, many of the other Communist positions had been taken by the regular troops, it appeared certain that Bergeret would be ordered by the Committee of Public Safety to fire the palace, and so large quantities of gunpowder, tar, and petroleum were conveyed into the building and placed in the various apartments. Having completed their preparations and fired the trains, Bergeret and his assistants retired to the barracks at the Louvre, and towards midnight viewed the flames that were seen issuing from every window of its great façade by the Tuileries. Some hours later all Paris was startled by a terrific explosion which marked the destruction of the cupola of the central pavilion and violently shook the surrounding district. The Communist general then despatched a message to the Committee of Public Safety (ensconced at the Hôtel de Ville), couched in the following terms: "The last vestiges of Royalty have just disappeared."

The conflagration of the Tuileries continued for three days, but was fortunately circumscribed by the stout resistance to the flames offered by the massive construction of the modern portions of the palace adjoining the quay and the Rue de Rivoli. The outer walls of the Tuileries remained standing for some years, and on various occasions proposals were considered for rebuilding the epoch-marking residence of the kings and emperors of France, but these schemes were all ultimately abandoned, and nothing now remains of the historic palace save its two end pavilions which face the river and the Rue de Rivoli.

PANEL ON EADIE MEMORIAL PULPIT, CONGREGATIONAL CHURCH, MANCHESTER.

J. AND J. SWARBRICK, AA.R.I.B.A., ARCHITECTS.

COMPETITIONS.

New Royal Infirmary, Bradford.

The designs submitted in this competition are now on exhibition, up to and including Saturday next, at Field House, Bradford, from 2 to 5 p.m.

Federal Capital City, Commonwealth of Australia.

The government of the Commonwealth of Australia invite competitive designs for the laying out of the Federal Capital City, and offer premiums as follows:—For the design placed first, £1,750; second, £750; third, £500. The conditions under which designs are invited, together with information, particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered to the Department of Home Affairs, Melbourne, Australia, by January 31st, 1912.

Proposed Cemetery Buildings, North Shields.

The assessor's award in the above competition is as follows:—1st, (£21), Messrs. Oliver Leeson and Sons, Newcastle; 2nd (£15 15s.), Mr. Edward Cratney, Wallsend; 3rd (£10 10s.), Mr. W. N. Scaife, Whitley. These amounts will be paid after the next meeting of the Whitley and Monkseaton Urban District Council, viz., July 19th. The Clerk to the Council states that "neither the assessor nor the Cemetery Committee are fully satisfied with any of the three sets of plans, which will therefore have to be remodelled to meet the views of the Cemetery Committee before being further considered. The Committee's idea is that there should be a further competition restricted to the three premiated architects, and that the latter should attend together before them to hear their ideas as to what they want, and that then new sets of plans should be sent in, to be submitted to Mr. Cross by numbers as in the original competition, and subject to its conditions as far as the same are applicable, the selected to be guaranteed the carrying-out of the work provided the lowest satisfactory tender then obtained is within the limit mentioned in those conditions."

LIST OF COMPETITIONS OPEN.

JULY 31. ELEMENTARY SCHOOL, LOWESTOFT.—Premiums of twenty, ten, and five guineas are offered by Lowestoft Education Committee for designs for an elementary school for 500 boys, to be erected at Roman Hill. Particulars on payment of 10s. 6d. Applications to be received not later than June 24. Designs to be sent by July 31. Address, R. Beattie Nicholson, Town Clerk, Town Hall, Lowestoft.

JULY 31. PARLIAMENT BUILDINGS, WELLINGTON, NEW ZEALAND.—Premiums, £1,000, £500, £300, and £200. Particulars, Minister of Public Works, Wellington, New Zealand.

JULY 31. DESIGN FOR AN IDEAL COUNTRY HOUSE.—The "Daily Mail" offers a prize of £100 for a design for a country house to cost £900 to £1,100. Architectural assessors, Mr. E. C. T. Monson, F.R.I.B.A., M.S.A., and Mr. Edwin J. Sadgrove, F.R.I.B.A., M.S.A. Particulars from Carmelite House, E.C.

AUGUST 8. LAY-OUT OF BUILDING SITES, EGREMONT.—The Egremont Urban District Council offer two prizes of £40 and £10 respectively for a scheme to lay out, under the Housing of the Working Classes Act, 1890, building sites at Egremont and Bigrigg. Map of the sites, showing position and depth of drainage, water, and gas pipes, will be deposited for inspection at the Town Hall, Egremont. The Egremont site consists of 1 acre 1 rood 16 poles, and the Bigrigg site 3 acres 1 rood 28 poles. Further information may be obtained of the Surveyor, Town Hall, Egremont.

AUGUST 15. MONUMENT AT BERNE, to celebrate the foundation of the International Telegraph Union. Copies of the conditions can be seen at the R.I.B.A. Library, 9, Conduit Street, W. Particulars in our issue of January 11th.

SEPTEMBER 16. LIBRARY AND ART GALLERIES, MANCHESTER.—Limited to the ten selected competitors in the first competition.

OCTOBER 31. NEW TOWN HALL, MARYLEBONE.—Premiums, £100, £75, and £50. Assessor, Mr. Henry T. Hare, F.R.I.B.A.

JANUARY 31, 1912. DESIGNS FOR FEDERAL CAPITAL CITY, AUSTRALIA. See note above.

NO DATE.—NEW BAPTIST CHURCH, NOTTINGHAM.—Nottingham architects wishing to enter a limited competition for plans of a new Baptist church and premises are requested to communicate with Messrs. Rorke and Jackson, solicitors, King Street, Nottingham.

THE NEW ROYAL COLLEGE OF SCIENCE, DUBLIN.

In the course of their visit to Ireland the King and Queen on Saturday last opened the new Royal College of Science in Upper Merrion Street.

The College has been erected at a cost of about £200,000 by the Board of Public Works. The architects are Sir Aston Webb, C.B., C.V.O., R.A., and Sir Thos. Manly Deane, the latter of whom was knighted by the King on Saturday. The College occupies one half a quadrangle, and it is intended that the other half shall be completed by the erection of new offices for the Department of Agriculture, the Local Government Board, and other public departments.

The King and Queen on their arrival were received in a pavilion in the quadrangle, where many men and women representative of the public life of Ireland had assembled. The Lord Mayor (wearing his chain of office) and the Lady Mayoress occupied prominent seats. Mr. Birrell, as the Minister in attendance, presented to their Majesties a number of officials, the Professors of the College, and the architects. When it came to Mr. Deane's turn the King bade him kneel, and, borrowing a sword from Sir Harry Legge, the Equerry in Waiting, tapped Mr. Deane on both shoulders and said, "Rise, Sir Thomas Manly Deane." The King's act was greeted with loud cheering, and the cheers were renewed when his Majesty announced that he had also conferred the honour of knighthood on Professor W. N. Hartley, the Dean of Faculty of the College, and regretted that, owing to Professor Hartley's absence on account of illness, he had been unable to knight him personally.

The King accepted a gold key from Sir George Holmes, on behalf of the Board of Public Works, and an album of views of the College from Sir Aston Webb, on behalf of the architects. The King and Queen then proceeded to the College and the King unlocked the principal door and declared the College open.

HOUSES FOR THE WORKING CLASSES.

A New Scheme.

An important scheme whereby the working classes may purchase their own houses on easy terms has been submitted to the London County Council by the Housing of the Working Classes Committee. It is pointed out that the only power which the Council has at present of advancing money to enable persons to acquire the ownership of the houses in which they reside is conferred by the Small Dwellings Acquisition Act, 1899. The number of loans granted by the Council under this Act have been very few, owing probably to the cost, the applicant having to find a considerable sum of money, and the local authority being limited in its advances to four-fifths of the market value of the property. The committee are of opinion that in order to make a successful scheme it will be necessary to advance practically the whole of the sum required for the purchase of the house, and the objects which it is desired to attain can best be secured in conjunction with the Council's housing operations.

The broad outlines of the proposed scheme are summarised in the "Times" as follows:—

The Council to erect cottages on land which it has acquired or may hereafter acquire under the Housing of the Working Classes Acts, and to grant leases of such houses for 99 years to persons of the working class.

The lease to be granted free of legal costs and other charges, but the lessee to pay as deposit and in part payment a sum of £5 on the granting of the lease.

The lessee to make payments throughout the term of the lease which shall be the equivalent of a ground-rent, with the inclusion of a small charge sufficient to repay the legal and other expenses incurred by the Council and to cover contingencies and establishment charges.

The lessee also to make payments for the first 15, 20, or 25 years, sufficient to repay the amount expended on the houses and land (less the capitalized value of the ground-rent and the sum of £5 deposited), such payments to be of equal amounts, including principal and interest, the interest being charged at such a rate as will involve no loss to the Council.

The prospective lessee is to satisfy the Council that he has a bona fide intention of residing in the house.

The Committee do not think it would be wise for the Council to grant leases for isolated cottages on all parts of its housing estates, and they suggest that separate blocks should be reserved for leasing, preferably on the confines of the estates. They propose that the experiment should be tried in the first instance with 20 cottages of five rooms to be erected on the eastern section of the Old Oak estate facing Wormwood Scrubs. Plans have been prepared of typical cottages, and estimates have been framed of the total weekly cost to the lessee in each case.

The committee suggest that application should be made in the Session of Parliament of 1912 for powers to enable the Council to grant, on such terms as it thinks fit, to persons of the working class, leases for any period not exceeding 99 years of houses provided by the Council in pursuance of the provisions of the Housing of the Working Classes Acts, 1890 to 1909; that the costs and expenses of promoting the proposed legislation be defrayed out of the county fund, and that such costs and expenses be regarded as incurred for specia county purposes.

THE UNITED STATES NAVAL ACADEMY.

(See Centre Plate.)

We have lately come to regard the Americans as brave builders, able and willing to spend their money lavishly on the best of everything in design and construction. It is therefore somewhat of a shock to find that the United States Government has not yet imbibed this free spirit, but, judging from the straits to which the architect of the United States Naval Academy was reduced, is every whit as cheeseparing and parsimonious as the Governments of less enterprising and, in some respects, less enlightened countries. From the following description it will be seen how deplorably Mr. Ernest Flagg's fine scheme was thwarted at well-nigh every turn, and at the same time how well he succeeded, in spite of all obstacles, in producing a most remarkable series of buildings, which, considering the use to which they are put, should possess peculiar interest for the architects of our own country, where, naval education being of supreme importance, the buildings in which it is conducted should be the object of special consideration.

The Site.

The site upon which the United States Naval Academy at Annapolis is built was originally in the form of a triangle. It was not satisfactory, and accordingly it was altered, with characteristic American enterprise, by adding reclamations on the river side. One end of the Academy ground opens on to the bay; and one side lies along the river. The yard forms an irregular quadrilateral about 2,000 ft. wide by 4,000 ft. long, and parallel to the original outlines of this yard the old buildings were arranged in rows. The arrangement was fortuitous, the buildings being put up, as the occasion for them arose, on ground that happened to be available, and consequently the interrelationship between the different blocks was very inconveniently dislocated. They were in no way worth preserving, and therefore were demolished without remorse. Fort Severn, however, whose existence had at the outset determined the selection of this site for the Academy, has been preserved on this account. Also the architect, in his piety, preserved the great central quadrangle with its fine old trees.

Quick Planning.

The architect, Mr. Ernest Flagg, had not been in the place a day when he sketched a plan which has since been adhered to in its general conception and main particulars. It provided buildings on three sides of the old Campus, leaving open the side towards the river. He chose the highest point, some 30ft. above the water, as the best situation for the chapel, which consequently became the dominating feature of the design. To the right of it, as one regards it from the centre of the Campus, are the superintendent's quarters, to the left his administration building. At the back of the chapel, and parallel with the wall on the town side, is the long row of officers' houses extending from the bay on the one hand to the creek at the upper end, a distance of about three-quarters of a mile. The row is broken into two sections by the intrusion of two city blocks, which in time will no doubt be acquired by the Government, when the row of officers' quarters will be linked up and become one of the most effective features of the plan.

The Chapel Group.

The chapel and the buildings on each side of it form one of the main groups; the officers' houses at the back of them a good secondary group; while at right angles to these is a third great group also consisting of three buildings, namely, Bancroft Hall (the midshipmen's quarters), which is the largest of all the buildings, with, on its right the gymnasium, and on its left the armoury, all three buildings being connected by colonnades. These buildings form a gigantic screen between the Campus and the parade ground. A difference in grade between the Campus and the reclaimed land of the parade ground on the bay side is compensated by a terrace about 18ft. high, which extends from the armoury to the gymnasium, a distance of 1,054 ft. This arrangement brings the quarters into convenient proximity to both gymnasium and armoury; the latter being conveniently placed with respect to the parade ground, on which one end of it abuts. The gymnasium building, which also comprises the Department of Seamanship, is uniform with the armoury in size and appearance, each being 500 ft. long by rather more than 100 ft. wide.

The Academic Group.

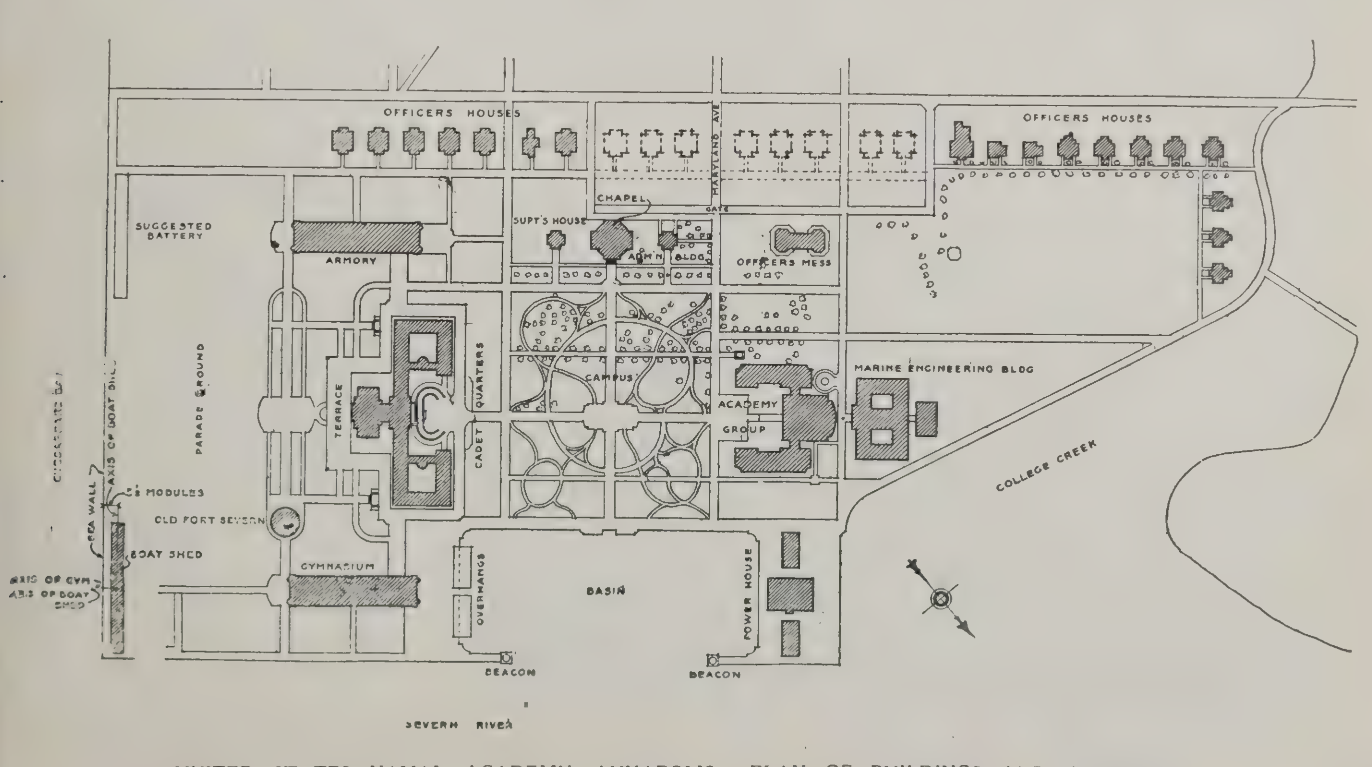
On the fourth side of the Campus (considering the side that is open to the river as the third) is what is called the Academic Group, which is really one building in three parts, built around three sides of a court. In the left wing are the class-rooms of the several academic departments, and the right wing houses the departments of physics and chemistry. At the back of this group stands the marine engineering building, with its annexe. These two buildings are rectangular in plan, the larger being 267 ft. by 175 ft., and the smaller 70 ft. wide by 125 ft. long.

Power House and Storage Buildings.

The remaining group, comprising the power-house and two shop and storage buildings, stands on what is called the power-house pier, and encloses on one side a basin 1,000 ft. long by 240 ft. wide. On the river side two short piers project from either end and partly enclose it. In the original plan provision was made for stone lighthouses or beacons, one on each pier, but, greatly to the detriment of the scheme, these have not yet been built.

False Economy.

Mr. Ernest Flagg also greatly regrets that, owing to what seem to him to be false notions of economy, the sea wall, which was to have been of granite, has



UNITED STATES NAVAL ACADEMY, ANNAPOLIS: PLAN OF BUILDINGS AND GROUNDS.

been constructed of cement, except on the power-house pier, while a projecting piece of wall shown in the designs has been omitted, with considerable sacrifice of the beauty of design. He hopes that at least a granite coping may be substituted for the unsightly cement (surely a weak compromise), and that a dignified and suitable landing-stage may be placed so as to form a central feature on the land side of the basin.

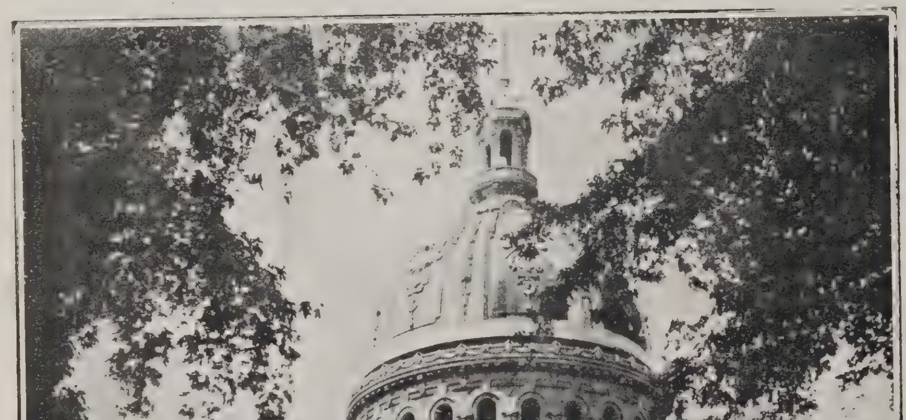
Of almost equal extent with the Campus and the parade ground is a field or green which is also surrounded on three sides by buildings, while the third side is open to water. While the work of rebuilding was in progress, this green was used as the parade ground of the Academy, but afterwards was to be used as a playground for the children whose parents occupy the officers' quarters, which enclose it on two sides.

On high wooded land beyond the creek on the river side is the cemetery, and beyond this the hospital; the marine barracks, with its parade ground, standing back from the river.

UNITED STATES NAVAL ACADEMY: THE GYMNASIUM AND BOATHOUSE.

The Chapel.

The chapel, already mentioned as occupying the highest point on the site, is a domical building, planned in the form of a Greek cross. The rotunda is 84ft. across. The width and depth of the chapel are equal—116 ft. inside and 128 ft. outside. Mr. Flagg complains that here again false economy has imperilled the artistic success of the building. When the original designs for all the buildings were approved by the State Secretary, the sum of 400,000 dollars was allotted to this building, but between that date and the time of its erection, the cost of labour and material had advanced fully thirty per cent., and the numbers attending the school had been so greatly augmented that the accommodation had to be increased by twenty-five per cent.; yet the original sum allocated remained constant, and consequently the architect found himself at his wits' end to reduce the cost. The massive walls of the original plan were abandoned for a skeleton framework of concrete with a veneer of masonry, the granite of the original design gave place to brick except for the moulded surfaces, and even here terra-cotta was used wherever possible instead of granite; the bed-mouldings and mutules of the main cornice, for instance, being of terra-cotta "in clever imitation of granite"—an abominable artifice which doubtless the architect regrets as much as anyone. The gilt copper covering proposed for the dome had also to be abandoned in favour of terra-cotta; while the interior, which Mr. Flagg had hoped to build of solid limestone like the great rooms in Bancroft Hall, was made of plaster. Even down to the most minute details economy had to be observed at the expense of the monumental character of the design. The organ-case is of plaster; the lamps which were to have stood on each side of the main entrance were omitted, and so on.

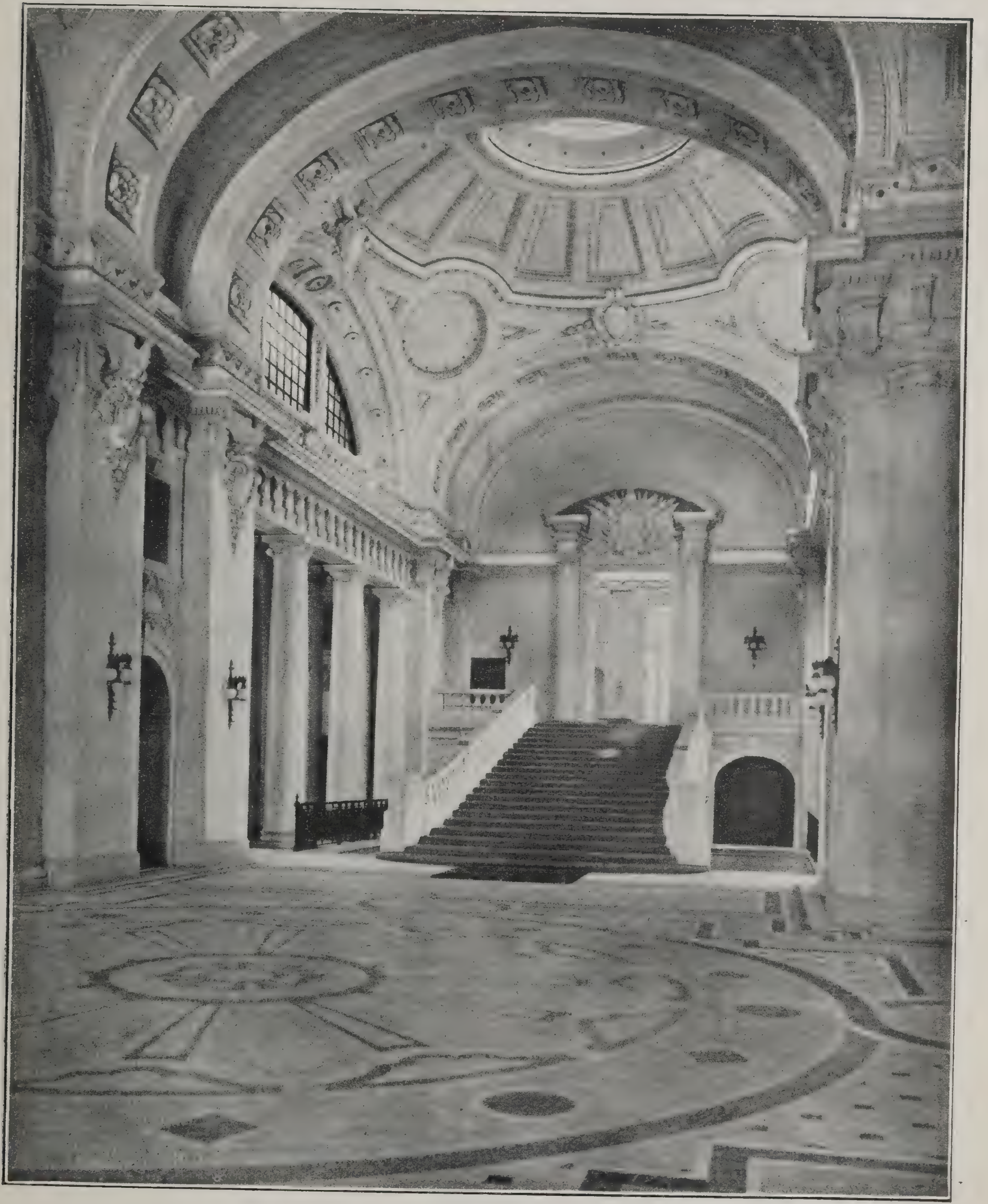


UNITED STATES NAVAL ACADEMY, ANNAPOLIS: THE CHAPEL FROM THE CAMPUS. ERNEST FLAGG, ARCHITECT.

Paul Jones.

Mr. Flagg suggested to the Secretary of the Navy that the crypt under the chapel would form a fitting resting-place for the remains of Paul Jones, the Father of the American Navy. The body was found in Paris, and the crypt was designed for its reception.

The chapel stands on a low terrace. The granite pedestals at either side of the broad flight of steps which lead to it are to be surmounted by trophies consisting of beautiful bronze guns of seventeenth century French workmanship, and anchors with chain. The central frontispiece is composed of Doric columns and piers sixty feet high supporting an entablature and semi-circular pediment. The columns and piers are ornamented with dolphin heads and festoons. Below the main architrave is a large tablet of Levanto marble, which was intended to contain a suitable inscription. The main doorway, which has richly moulded architrave and cornice, is 23 ft. high and 10 ft. wide. This doorway is to contain a monumental pair of bronze doors in memory of the Class of 1868. Miss Evelyn Longman was chosen to design the doors as the result of a competition in which thirty-three designs were submitted.



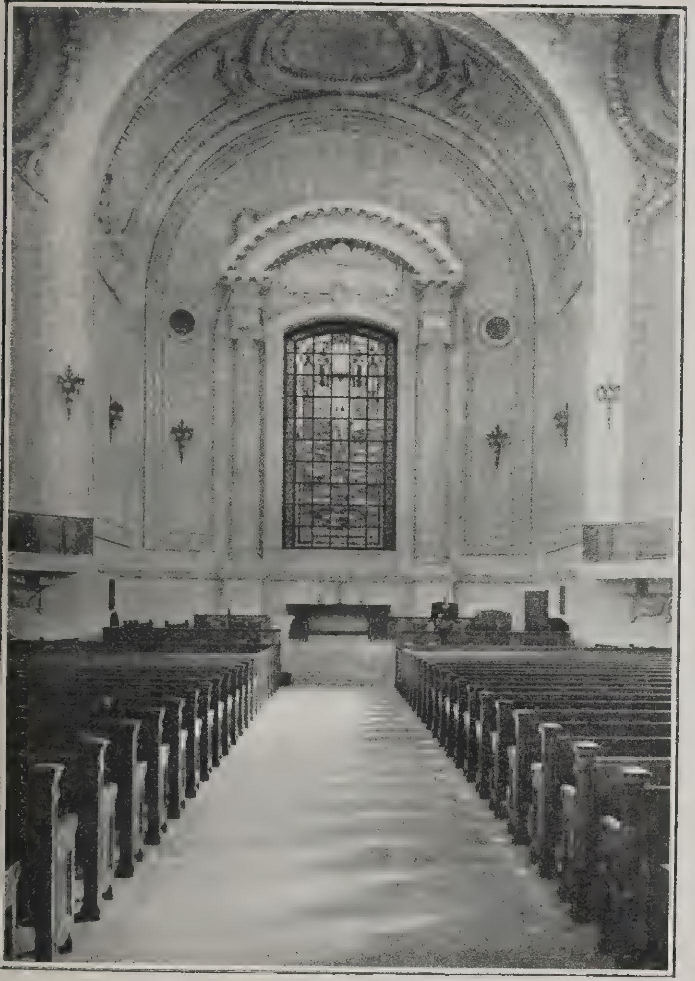
UNITED STATES NAVAL ACADEMY, ANNAPOLIS:

CENTRAL STAIRCASE LEADING TO MEMORIAL HALL, BANCROFT HALL, FROM VESTIBULE. ERNEST FLAGG, ARCHITECT.

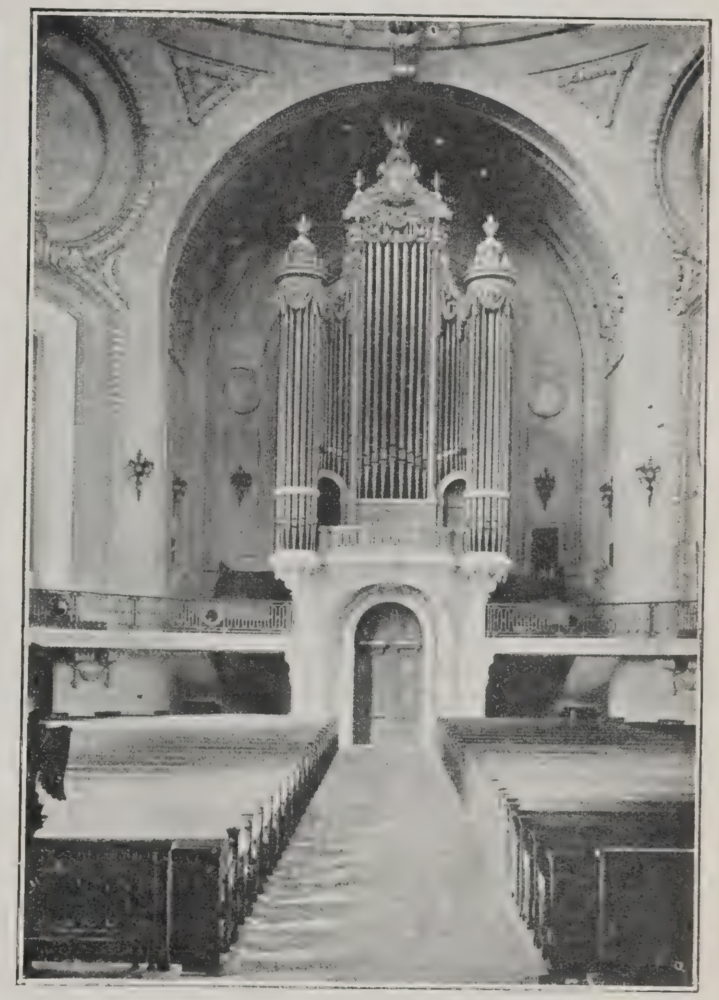
LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

Above the pediment the frontispiece is crowned by trophies of arms and armour. The transept ends are of the same size as the end of the nave, but their treatment is different. Each one contains a large semi-circular headed window filled with delicate tracery in limestone.

The drum of the dome rests on a base of circular steps of granite. It contains a frieze of twenty-four round headed windows, separated by Doric piers. The entablature has a cresting ornamented with blocks and festoons of cable. The dome covering is of terra cotta divided into eight great panels with trophies in relief. The lantern, also of terra cotta, is surmounted by an obelisk, and has a balcony with a balustrade at its base. The whole interior is finished in imitation Caen stone. The wall surfaces and vaults are decorated with panels which were intended to receive decorations in fresco.



The Chance!.



Organ and Entrance.

UNITED STATES NAVAL ACADEMY, ANNAPOLIS: THE CHAPEL.

The monumental window of the chancel ontains stained glass erected by the Class of 1869, as a memorial to Admiral Porter. The altar table is of richly sculptured cherry. The slab is supported by figures epresenting the four beasts of the Apocalypse. A low gallery or balcony supported by rich corbels extends round he interior except at the chancel nd; it has a handsome balusrade of wrought iron. The organ tands on a base formed by the entrance estibule. The piers between the winows of the drum of the dome have figures built against them representing the ifferent races of men. The great vault f the dome is richly ornamented with piral caissons, in the centre of each of which is a light. This vault is at a considerable distance below the outer covering; both are built of concrete. The outer shell has a thickness of 6 in. at the base and 4 in. at the top, which is only about half the thickness in proportion to its size that an egg-shell is to the egg, but its strength is ample to carry the fifty-ton lantern at its apex.

Officers' Quarters and Administration Building.

The Superintendent's quarters has two principal entrances, one for the ordinary use of the family giving upon the terrace, and another entrance, for use at receptions and other social functions, on a lower level, preceded by a courtyard 70 ft. wide and 100 ft. deep, entered from Governor Street. This court was intended to be furnished with a high wrought iron grille and gates, but these were omitted to reduce the cost.

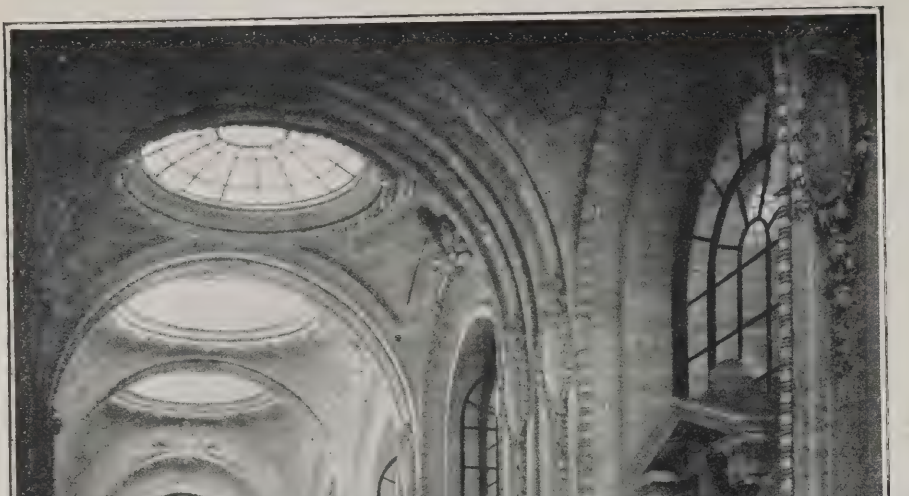
The Armoury and Boat House.

These twin buildings are entirely of granite; the contracts for them were let soon after the estimates were made, and their cost was within the amount allowed; they are, however, the only buildings of the entire group which were not pared down to meet the advance in the cost of building, and to provide for the increasing requirements of the school, made necessary by the great increase in the number of midshipmen. The Armoury contains class rooms and offices for the Department of Ordnance, and the Boat House similar accommodation for the Department of Seamanship. The drill hall in the Armoury is 360 ft. long by 100 ft. wide; it has a balcony on all sides 12 ft. wide, which is used as a sort of museum of ordnance. The interior walls of the building are faced with buff bricks. The interior of the Boat House has undergone an almost complete transformation since it was built; it having been converted into a Gymnasium. The Gymnasium as originally planned for 500 midshipmen was, of course, too small for 1,000. Rather than ask for sufficient money to make it large enough, the authorities decided to convert the greater part of the boat house into a gymnasium, and to place the boats in an inexpensive shed.

As originally designed, the boat house on one side of the quarters, typifying the nautical side of the midshipmen's training, and the Armoury on the other, typifying the military side of his training, seemed particularly appropriate, and the architect was sorry to see the building diverted from its original use, but it must be confessed that, transformed as it is, it makes a very fine and complete gymnasium. The principal hall is 100 ft. wide by 200 ft. long. The swimming pool is 76 ft. long and 56 ft wide. The provision for lockers, team rooms, baths, etc., is most liberal, and the general equipment is in every respect what it ought to be.

The Academic Group.

Here again a delay of several years occurred between making the estimates and starting the work, so that the liabilities grew while the allotted cost remained stationary. It was therefore determined to re-plan the group, and to combine the physics and chemistry building with the library and academic building. Brick



UNITED STATES NAVAL ACADEMY · STAIRS IN LIBRARY BUILDING.

was substituted for granite, and the space allotted to the library was greatly reduced; and the architect thinks that here the alterations from the original plans were the most disastrous of all.

The courtyard, upon which the buildings face, was intended to be raised, to be approached by a broad flight of steps and to be ornamented by balustrades, pedestals for trophy guns, and other architectural features, but all this was abandoned to keep down the cost.

The library building at the back of the courtyard has two storeys and a basement, the latter faced with granite, boldly rusticated. The main entrance is approached by a double run of steps. Above the first platform a marble tablet which was made when the Academy was first established at Annapolis has been set in the parapet. The first storey of the building is made of alternate courses of brick and granite without ornamentation, and is pierced by six large windows, and the central doorway. The second floor contains the main reading room, and the front is ornamented by coupled Doric columns between the windows and by panelled piers at the corners. Over the central window, which is larger and more elaborate in its treatment than the others, is a semi-circular pediment sheltering two reclining marble figures, which rest on the archivolt of the window. Above the main cornice is a balustrade. At the corners of the piers are trophies composed of prows, etc. The pedestals above the coupled columns were intended to receive the statues of six admirals, but they were omitted for lack of funds. The clock tower stands about 30 ft. back of the façade. It is 25 ft. square by 140 ft. high. The entrance vestibule is an apartment 135 ft. long by 34 ft. wide. It is finished in Caen stone, and the floor is of sandstone. It is divided into a central nave and aisles by piers which support the vaulting. The nave is covered by a barrel vault, which is penetrated at each bay by transverse intersecting vaults which cover the aisles. The floors of the aisles are raised by five steps above the general level, making platforms intended for the display of some of the objects of historic and technical interest which have been accumulating for years at the Academy. The auditorium is 84 ft. wide and 66 ft. deep. The back wall is curved and is pierced by five large windows. The hall has a gallery, and the total seating capacity is about 1,000. The library classrooms are generally 25 ft. square, each room being lighted on one side by a very large window above the blackboard, which extends round the room. The basement walls are of granite, and the rest of the walls of brick and granite. The roofs are of slate and copper. The Physics and Chemistry Building contains a lecture hall having a seating capacity of about 600.

The Bancroft Hall.

This building, the midshipmen's quarters, named in honour of the statesman George Bancroft. It is five storeys high, and is built round three courts, of which the central court is 300 ft. wide and 183 ft. deep, the other two courts being each 100 ft. square. A pavilion projecting from the centre of the building, on the water side, is 167 ft. wide by 200 ft. deep, and contains the recreation hall below and the memorial hall above. It stands on a terrace 1,040 ft. long by 75 ft. deep; and the terrace is low on the Campus side and high on the parade ground side. The Bancroft Hall is entirely of granite.

The basement and all the architectural details are of cut work, and the plain wall surfaces are of rock-faced ashlar. The main entrance doors are bronze, and the roofs are of slate and copper. Four very handsome French bronze cannons of seventeenth century workmanship are mounted on pedestals at either side of the perron. The arms of the Academy are over the central doorway, and trophies in granite surmount the flanking piers o the frontispiece. Tablets of Levant marble are above the lesser doors. The corner piers of the angle pavilions are ornamented above the cornice line by granite blocks in the form of capstans richly carved. A fountain occupies th corner of the terrace wall.

The three doorways of the main entrance above mentioned give access t the vestibule, the walls of which up t and including the cornice are of soli limestone. The vaulting is covered wit plaster, and was intended to be decorate in fresco. The floor is of marble. Th central flight of stairs leads to the Memo rial Hall, and side flights lead to the Re creation Hall. These two rooms occup the projecting pavilion on the water fron of the building. The main corridors a the various storey levels are 16 ft. wide and traverse the building longitudinall At either end they abut upon the portico connecting this building on one side wit the Armoury and on the other with th gymnasium. Together they form a vist 1,247 ft. in length. These main corrido are intersected by others which give a cess to the parts of the building whic enclose the two smaller courts. Th rooms are arranged in suites of thre rooms and a bath; each suite intende for two midshipmen. Each boy has h own bedroom, and the bath and study a used in common. The studies are 16 f square, and the bedrooms half that siz

At the head of the steps in the vestibu a monumental doorway gives access the principal room in the buildings, calle the Memorial Hall. Like the vestibul the walls of this room up to and inclu ing the cornice are of solid limeston Its length is 158 ft. and its breadth 60 ft. The vault is covered with plast which was intended to be decorated fresco. The recreation hall was original intended as the mess hall, but owing the great increase in the number of mi shipmen, it was not large enough. Wh the plans were made the number of mi shipmen was about 300, and the buildi was designed to accommodate 500, b efore it was finished the number had ncreased to 900. The loggia is at the evel of the memorial hall, and the large vindows below it give light to the reation hall. The kitchen is below the ast mentioned apartment, and the mess all occupies the space under the terrace. t is 380 ft. long, and 73 ft. wide, divided nto three aisles by piers which support e vaulting, 18 ft. above the floor.

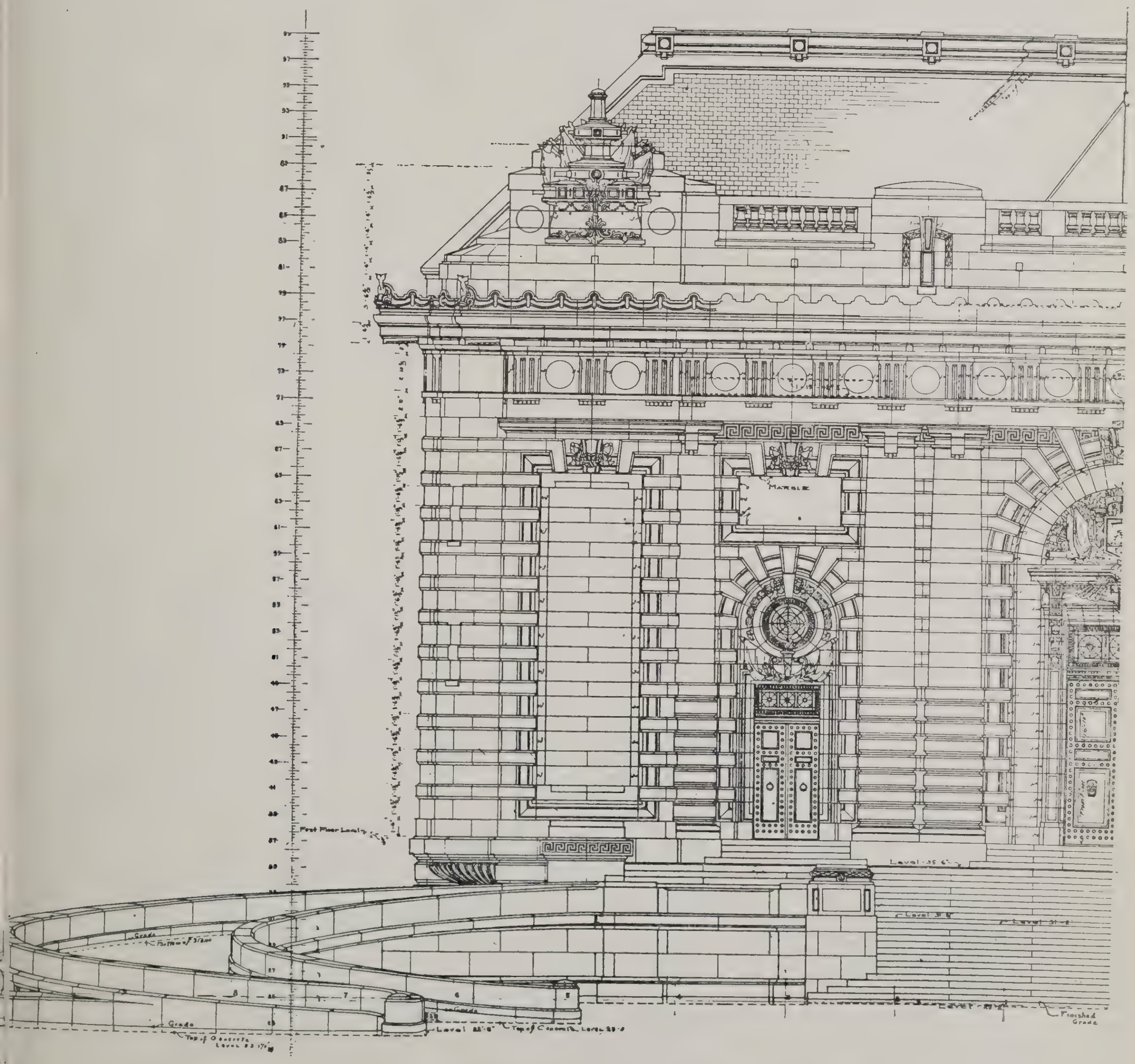
If Bancroft Hall had been built acording to the original plan, there would ave been a central longitudinal corridor n the main floor 22 ft. wide, lighted from bove, while the corridors on the upper oors would have received direct light om courts instead of borrowed light rough the room, as at present. It was so necessary to abandon the granite ormers of the corner pavilions and subitute copper; also to omit the crowning alustrade of granite. The architectural eatment of the corner pavilions was so modified farther to reduce the cost, ut the necessary reduction was made ithout using brick instead of granite and otherwise reducing the quality of the materials and workmanship, as it was found necessary to do in the later buildings, after there had been a still further advance in the cost of construction.

ARCHITECTS' BENEVOLENT SOCIETY.

The Council of this Society, in submitting their sixty-first annual statement, report that the sum of £727 15s. had been distributed in eighty-six grants, while the further amount of £250 has been paid to the Society's pensioners, thus making the total sum expended in relief £977 15s.

Although thirteen new subscribers have been enrolled, the total amount received in subscriptions was below that of the previous year; the actual figures being £702 0s. 6d., as against £709 9s. 6d. received in 1909, without including the sums received for subscriptions in arrear or for those paid in advance. Among the new subscribers, the Council have the pleasure to mention the Manchester Society of Architects for £5 5s., while the Leicester and Leicestershire Society of Architects have increased their annual subscription to the same amount. The falling off in the total amount has been occasioned by the large number of subscriptions which remained unpaid at the end of the year, notwithstanding repeated applications. Many of these overdue amounts will no doubt yet be received; but the Council wish to point out that the consideration of deserving cases would be greatly facilitated if the general body of subscribers were to realise their responsibility with regard to prompter payment. Subscriptions are due on the 1st January.

The amount received in donations and bequests has fallen much below the average, being, for instance, £109 15s. as against £300 6s. 2d. received in 1910. As, however, a credit balance was carried over from the capital account (to which all donations and bequests are placed), an investment was made in the purchase of £200 Queensland 3 per cent. Inscribed



UNITED STATES NAVAL ACADEMY, ANNAPOLIS: HALF ELEVATION OF BANCROFT HALL

ERNEST FLAGG, ARCHITECT.

Stock at a cost of £172 6s., while at the end of the year the sum of £128 0s. 2d. remained in hand.

The Society during recent years has suffered from the death of many of its most generous supporters. The Council greatly regret to add that this number was increased last year by that of Mr. John T. Christopher. Mr. Christopher was not only a generous contributor to the Society, he also took, as a member of the Council on many occasions, an active interest in its administrative and philanthropic work, to the consideration of which he was always willing to devote his energy and time. The Council highly appreciate an intimation which they have received from the members of his family, through Mr. Freville Christopher, that they wish to contribute a hundred guineas to the Society as a tribute to his memory.

The following, being the five senior members, retire by rotation from the Council:—Mr. Benjamin Ingelow, Mr. Henry Lovegrove, Mr. Rowland Plumbe, Mr. William Woodward, and Mr. Arthur Ashbridge. To fill the vacancies caused by these retirements the Council have the pleasure to nominate: Mr. T. E. Collcutt, Mr. George Hubbard, Mr. E. B. I'Anson, Mr. A. Saxon Snell, and Mr. W. L. Spiers.

The thanks of the Society are due to the Royal Institute of British Architects for office accommodation, and to the staff of the Institute for their always helpful courtesy in any matter connected with the Society.

Subscriptions and donations should be sent to the honorary treasurer (Mr. W. Hilton Nash, 9, Conduit Street, W.); the honorary secretary (Mr. Percivall Currey, 37, Norfolk Street, Strand, W.C.); or the bankers of the Society (Lloyds Bank Ltd., 16, St. James's Street, S.W.) No collector is employed by the Society.

A STANDARD TECHNICAL DICTIONARY.

The latest addition to the admirable and extremely valuable "Deinhardt-Schlomann Series of Technical Dictionaries in Six Languages" is the eleventh volume, which seems to be of considerably greater bulk than any of its precursors, the matter occupying about 900 pages, in which are given about 1,600 illustrations. The subject, indeed—"The Metallurgy of Iron"—is of enormous range, as conceived by the compilers, whose object was the compilation of a dictionary which should form a trustworthy lexicographic aid to the metallurgist, the chemist, the works engineer, the blast-furnaceman, the foundryman, and those engaged in steel works and rolling mills; and the principle which has governed the arrangement of the work throughout has been to include not only those terms which relate strictly to the metallurgy of iron and steel, but also those connected with such other branches of engineering as the metallurgist comes in contact with in his daily work. The editor has, of course, received much able assistance in his heavy task, and, in particular, he mentions his indebtedness to Mr. L. P. Sidney, of the Iron and Steel Institute, who revised the English portion. The sections under which the entries are arranged may be usefully mentioned. They are as follows: Classification and grading of iron; taking over and testing of material; occurrence and deposit of iron ores; dressing of iron ores; fuels; flux; refractory materials; metallurgical work plants; laboratory; blast furnaces; manufacture or production of wrought iron; manufacture of steel by fusion; iron and steel casting, foundry; hardening or tempering the steel; protection of iron; production, make, output; supply, delivery; and an appendix on the vocabularies of the manufacture of steel in the electric furnace. A very full index gives the page and column in which each word is to be found. This series of technical dictionaries, the product of enormous care and equal industry, is certainly of great value and importance, and each successive volume increases admiration and respect for its conception and execution.

The Deinhardt-Schlomann series of Technical Dictionaries in Six Languages—English, German French, Russian, Italian, Spanish. By Alfred Schlomann. Vol. XI.: Metallurgy of Iron. Compiled by William Venator and Dr. Colin Ross. With about 1,600 illustrations and numerous formulæ. London: Constable and Co., Ltd., 10, Orange Street, Leicester Square, W.C. Pages xii. + 785, 4½ins. by 7¼ins. Price 10s. 6d., net.

R.I.B.A. ANNUAL DINNER.

The annual dinner of the Royal Institute of British Architects was held on Tuesday, the 4th inst., at Fishmongers' Hall, Adelaide Place, London Bridge. Among those present were: Mr. Leonard Stokes, the Right Hon. the Lord Mayor, the Right Hon. the Lord Saye and Sele, His Grace the Lord Archbishop of Westminster, Sir Edward Poynter, Bart., P.R.A., Sir Thomas Barlow, Bart., K.C.V.O., Mr. H. A. Miers, F.R.S., Sir Henry Buckingham, Sir William Emerson, the Hon. John Wanamaker, Sir Edward H. Busk, M.A., Sir Frank Short, R.A., Sir Aston Webb, C.B., C.V.O., R.A., Sir Thomas Brock, K.C.B., R.A., Mr. Gerald Horsley, Mr. Edgar Horne, M.P., His Honour Judge Rentoul, K.C., the Very Rev. Professor Inge, D.D., Sir Ernest George, A.R.A., Sir Charles Lawes-Wittewronge, Bart., Sir James Linton, P.R.I., Sir Henry Morris, Bart., Sir Henry T. Butlin, Bart., Mr. Edward White, Sir Lawrence Alma-Tadema, O.M., R.A., Sir Brumwell Thomas, Professor Beresford Pite, Mr. Henry T. Hare, Mr. Paul Waterhouse, Mr. John W. Simpson, Mr. James S. Gibson, Mr. E. L. Lutyens, Mr. M. H. Spielman, Mr. Lewis Hind, Mr. A. G. White, Mr. Thomas Costigan, and many others.

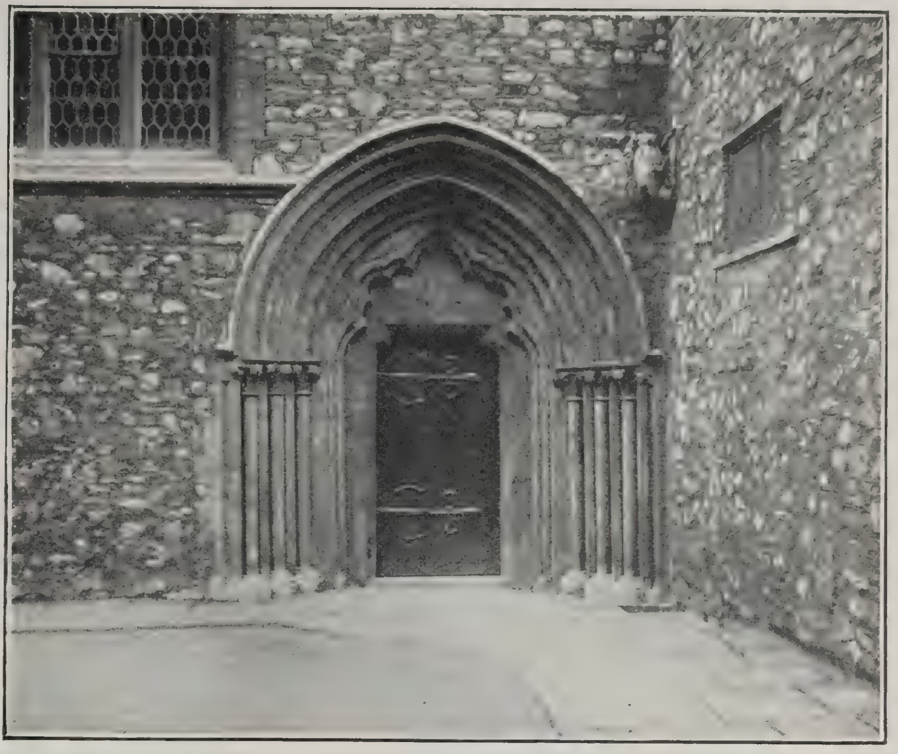
At the conclusion of the dinner, the usual loyal toasts having been observed,

Mr. H. A. Miers, F.R.S., Principal of the University of London, in proposing the toast, "Architecture and the Sister Arts," said that before he entered the room he had been in some doubt as to what those sister arts were. He now understood them to be painting and sculpture. Having acknowledged his obligation to Parker's "Glossary of Architecture" as a book that stimulated his early interest in the art, the speaker said that none could spend any considerable time at Oxford, as he had, without realising the importance of architecture. John Stuart Mill had similarly acknowledged this fact by telling of the relief it afforded him to stay with the Benthams at Forde Abbey, and to live in its romantic surroundings. Coming from Oxford to London, he was ashamed to find that there was no great building for its University—no building that should stand for an academic idea. Only once, indeed, had he met a London cabman who could offer any suggestions as to where the University was situated, and then he only thought it was somewhere near 'Oxton or 'Olloway, probably confusing it with the Union. The re-erected Crosby Hall was a recent endeavour to establish a building with its University surroundings. London, continued the speaker, was the only city in the world that did not possess a representative and comprehensive collection of casts from the antique. There was at present on exhibition at London University a collection of paintings brought back from Egypt by Professor Flinders Petrie. At the University, he added, they were taking steps to combine the two schools of architecture and painting, and he hoped, too, that sculpture would be included.

Professor Beresford Pite, replying for Architecture, briefly reviewed the changes in the arts. Painting was no longer essentially associated with building, but was confined with the bounds of frames. Sculpture had deserted its historic position upon the pediment and was now identified with the pedestal. There was, he believed, nevertheless, a growing appreciation of architecture. He was glad to avail himself of that opportunity to congratulate the Lord Mayor upon his presiding over the fortunes of one of the most beautiful cities in the world; a city which, to mention only a few of its features, included in its midst Greenwich Hospital, Somerset House, Waterloo and London bridges, and St. Paul's. It could boast of such a number of Renaissance buildings as could not be equalled elsewhere in the world. London was indeed well served in the past, though it had its modern blemishes. The speaker then made reference to the Town-Planning Conference and its results, and said that town-planning was essentially architecture in its largest and most universal aspect. He would like to congratulate the Lord Mayor, further, upon the appointment of the three distinguished architects with regard to the St. Paul's Bridge. The question, however, was too large even for architects. He was not sufficiently sanguine to believe that the question was so near solution as some would have it. Above all things had to be considered the safety of that dome. Public opinion, he was sure, would lend its weight to the Corporation in any scheme so large as to do justice to St. Paul's Cathedral.

Sir E. J. Poynter, P.R.A., replying for Painting, said that the English School had of late years achieved a remarkable degree of success. In all the international exhibitions of the last few years English painters had shown themselves second to none. At Rome, indeed, the English section was universally acclaimed as the most distinguished. Painting, he continued, achieved its highest form when associated with architecture, adding a lustre which frequently outshone the edifices which it adorned. Painting in relation to architecture should not be allowed to stop at the corridor in the House of Lords; he urged the carrying-out of the complete scheme intended for the Houses of Parliament. From the time of Giotto to that of Tintoretto there was not a painter in Italy but who had a knowledge of architecture. Those at the present day might be counted upon the fingers of the two hands. Such ignorance is lamentable and he sincerely hoped that in the Royal Academy schools architecture would be an imposed, instead of a voluntary, exercise.

Sir Charles Lawes-Wittewronge, replying for Sculpture, referred to the work of the Royal Society of Sculptors, of which he is President, observing that, although a young society, it had successfully organised exhibitions at Rome and at the White City, London. That architects were more frequently utilising sculpture in the decoration of their buildings should, he thought, operate advantageously for the School of Sculpture.



DOORWAY TO REFECTORY, BRISTOL CATHEDRAL.

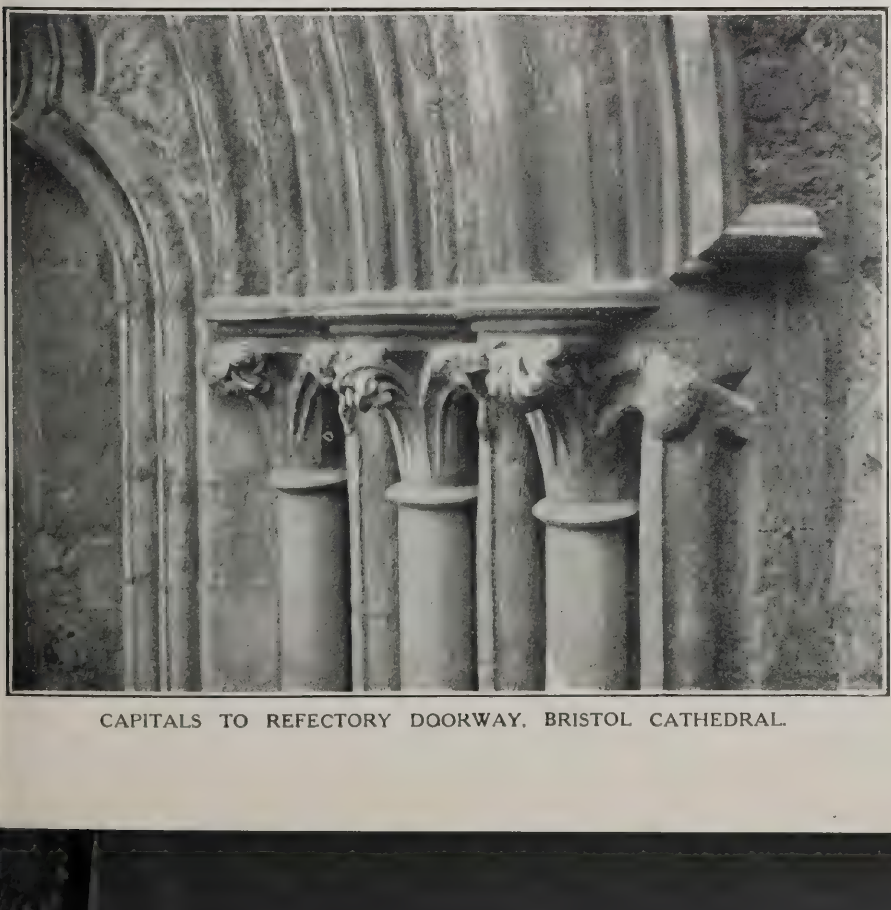
Sir Aston Webb, C.B., C.V.O., R.A., roposing the toast, "The Houses of Par-ament," said it was usual to say that arliament had little to do with art. Its oncern with art, however, was increas-ig. The House of Commons had only uite recently expressed its opinion pon the proposed bridge across the 'hames. An M.P. had told him that ie House of Commons had expressed an pinion upon a matter of art. It was argely through their President that this ad been brought about. Parliament ould not produce a design; but it could iy that projects should be investigated y those who were best fitted to judge.

Lord Saye and Sele replied for the [ouse of Lords, and Mr. Edgar Horne, I.P. (in the absence of Mr. John Burns), or the House of Commons.

Mr. Paul Waterhouse, proposing the oast, "The Guests," referred to a work y a Dutch author, on the entertainment f guests, which he had recently acquired om a barrow in Farringdon Road. This ork contained a statement of the effect iat by the wise entertainment of guests ne might profit by 100 per cent.—a entiment, however, which he considered be in singularly bad taste. All, he iought, would admit the importance of ie Solar System, of which the world as perhaps the most important member. ngland was the most important coun-y in the world; London was the most portant city in England; the small rea that represented the City was the ost important part of London; and ver this presided the Lord Mayor, who raced their table that evening. In Sir esey Strong they had a man who nobly pheld the traditions of his office. Many rchitects had worked for the church re-resented by His Grace the Lord Arch-shop of Westminster—Pugin at the eginning and the great architect of Vestminster Cathedral at the end. Both iese men showed in a conspicuous way ow a man's art could be wrapped up in s faith. It was a peculiar commentary pon architectural distinction that when entley's great work was finished, he was most as much lost to notoriety as the uilders of the Middle Ages.

The Lord Mayor, in the course of his eply, said that, in view of his official status in a certain important body which employed architects, there might be more than ordinary significance attaching to Mr. Waterhouse's quotation to the effect that 100 per cent. profit should be supplied by those who were allowed to enjoy the privilege of being guests.

The Archbishop of Westminster, replying, said that when he came into contact with architects it was on the ecclesiastical side. Usually the work was to be of the simplest possible character at the least possible expense. The first interview was generally the most pleasurable of a series. The speaker, alluding to Westminster Cathedral, termed it a very masterpiece of modern English architectural skill, and said that if he were obliged in any way to limit architectural work it would not be out of gratitude to the profession. Architects had done much to add to the majesty and dignity of Divine worth; and they would find in ecclesiastical work the fullest and highest of artistic conception.



CAPITALS TO REFECTORY DOORWAY, BRISTOL CATHEDRAL.

DETAILS—OLD & NEW.—XVI.

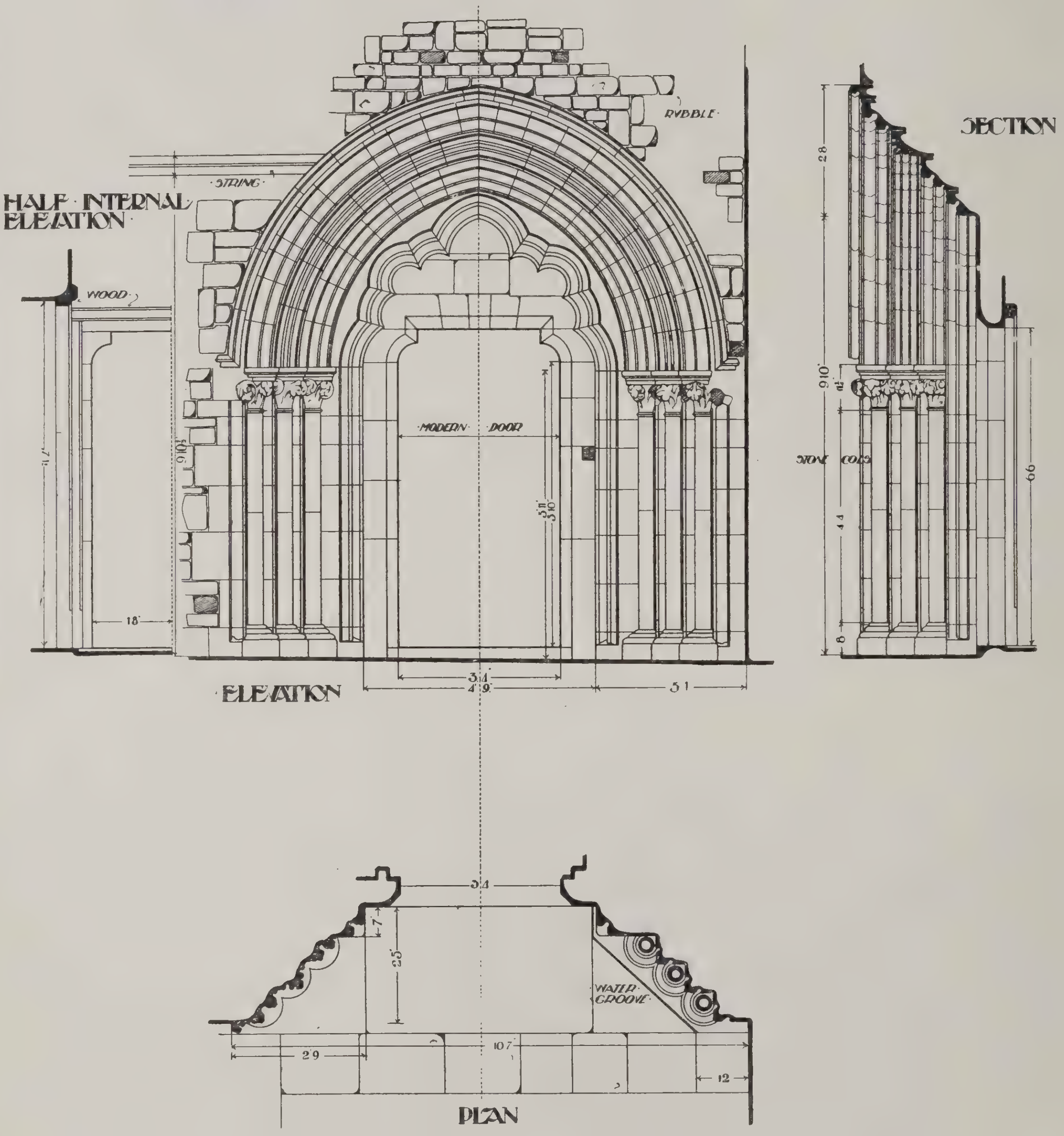
Doorway to the Refectory,
Bristol Cathedral.

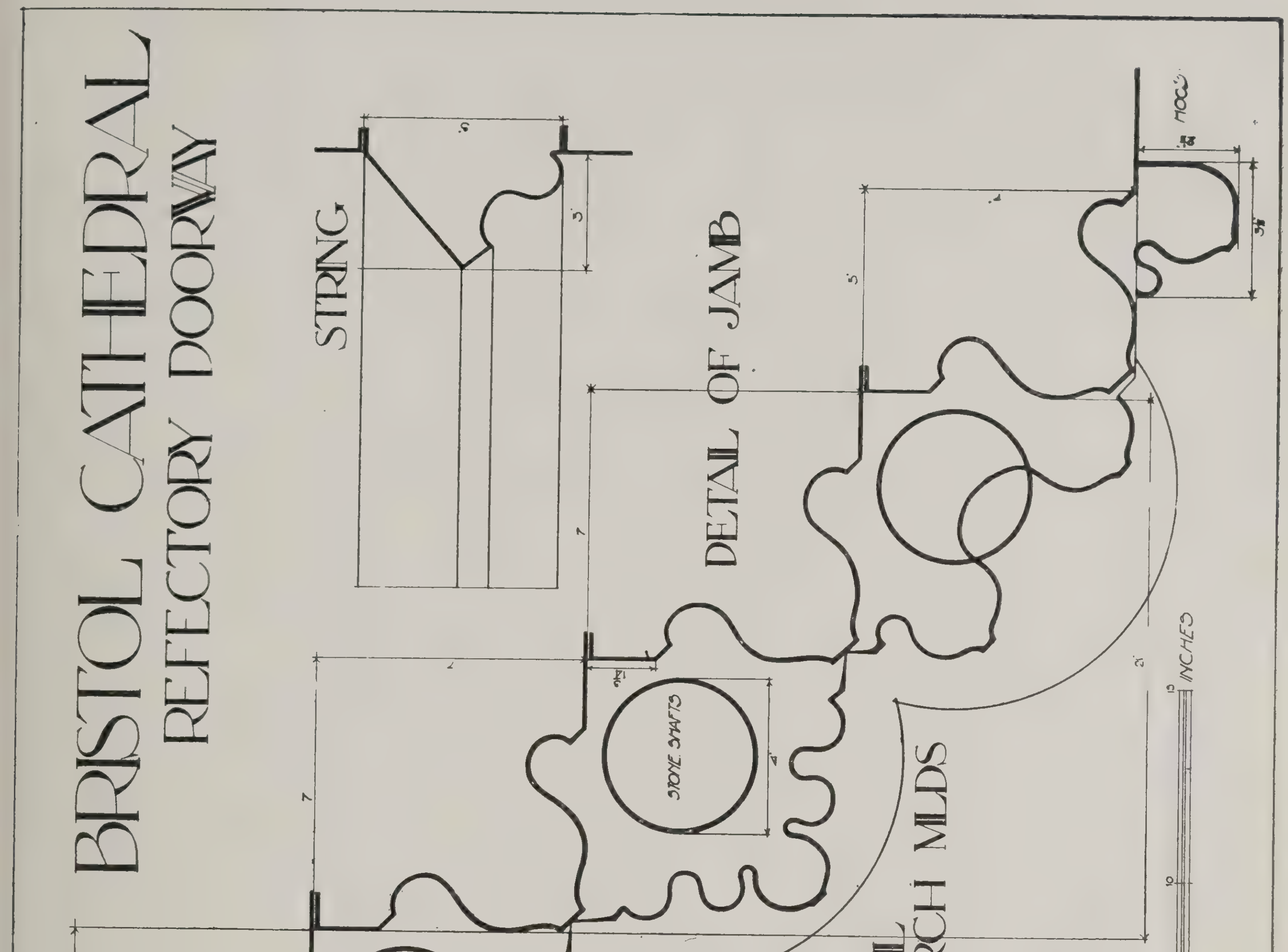
The city of Bristol is very rich in interesting doorways, both of the Gothic and of the Renaissance period. It would be difficult to find a better example from the 13th century than the doorway situated at the south-west corner of the Cathedral cloister. It was originally the entrance to the Refectory, but it now leads to the Grammar School. Fortunately, although much restored in recent years, it retains much of its ancient character. In the matter of design it is singularly pleasing—a quality which is after all but little affected by restoration. Perhaps it is the middle plane, with its elaborate cusping, which chiefly imparts this quality. Its interposition between the flat plane of the lintel and the rich arch mould of the outer plane is extremely effective. The orders of the arch mould are well marked into three distinct planes, very delicately moulded and carried by slender pillars with foliated capitals. It should be noted that the ground falls towards the right hand. A curious inadvertency on the part of the builders was to make the shafts all of the same length, and to place them with their bases at equal distances from the pavement on which they severally stand. As a consequence, the springing of the arch is at different levels on each side. It must have been a matter of considerable ingenuity to build the centering for it. The capitals are, of course, all new. But the general effect is one of considerable charm, with just that touch of individuality which makes it seem as if the old stonemasons and builders put a part of themselves into their work—as if there was a touch of inspiration in the force that turned the rough unhewed stones of the quarry into speaking witnesses of the Faith behind it all.

J. M. W. H.

EARLY·ENGLISH·DOORWAY·

BRISTOL CATHEDRAL




BRISTOL CATHEDRAL
REFECTORY DOORWAY
STRING
DETAIL OF JAMB
STONE SHAFTS
DETAIL OF ARCH MLDS
CAPITAL
MODERN FOLIAGE
BASE
MOD.
INCHES
0
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10
12

A HISTORY OF LONDON ARCHITECTURE.

London being rather a large place, and containing a fair number of tolerably interesting buildings, there would seem to have been no need for the author of "A History of Architecture in London" to do so much violence to his title as may perhaps be hastily inferred from his inclusion of Croydon, of Bromley in Kent, and of Hampton Court. It turns out, on examination, however, that, except in the case of Hampton Court, to which considerable space is devoted, the references to these outlying districts are but slight and supplementary, and in no way encroach on the general scope of the book, while adding a little to its interest. It would therefore be ungrateful to suggest that the author had travelled beyond his area; but, on the other hand, there is some reason for complaint that, in so small a book, it is manifestly impossible to realise at all adequately so large a title. If the author had followed the modest example rendered popular by the late J. R. Green, and called his handsome little book a "short" history, he would have avoided the raising of expectations which in the nature of things he has been unable to fulfil.

The book, however, is so interesting and so compact, that he would be indeed hard to please who would have it other than it is. While the book can be carried about with comfort on the many visits which it is certain to provoke, then to be consulted on the spot, it contains enough of architectural history to satisfy the layman, to stimulate the professional student to fuller enquiry, and at the same time to lift the volume right out of the baleful category of the guide-book. Yet if the term guide-book had not assumed so dreary a significance, it might have been applied with more than the usual felicity to this volume; which even in the mere matter of maps is seen to decided advantage. These are to the perfect number of seven, each dealing with a different district, and each marked with very conspicuous blue circles inclosing a number which bears reference to some feature of architectural interest.

Having thus clearly shown where to find the buildings that are worth visiting, the author explains in each instance—not blatantly and perfunctorily, as is the manner of the hirelings, but delicately, gracefully, and out of the fulness of love and knowledge—the features that are best worth observing, and the beauties and the faults of design and construction, seasoning the dish with enough of history, of archæology, and of æsthetics, to redeem it from insipidity.

An introduction dealing with "The rise and growth of architecture in Europe until the end of the tenth century" is less succinct than it might have been if the writer had taken more pains with it: the art of condensation being notoriously so laborious and difficult that a busy man simply has not time to be brief. The introduction is rather too rhetorical. For example, take the following passage: "Architecture began with the Greeks. It was the invention of the Hellenic peoples, and the forms which they created have controlled the greater part of the architectural activities of Europe and the Western world until the present day. Two and a half millenniums [the printers spell it "milleniums"!] ago, in the eastern part of the Mediterranean Sea was enacted the wonderful drama which we find in the pages of Homer, of Herodotus, and of Thucydides. The little nation which lived on the shores and the islands of the Ægean Sea, whose bold spirit checked the Persian advance and saved Europe from the domination of Asia, has handed down to us a heritage of art, literature, and philosophy which is so great that the main characteristics of our European civilisation are still of Hellenic mould." The eloquence of such passages strikes us as being rather out of scale; and luckily the author abandons this exuberance of verbosity as soon as he comes to grips with his real subject, although the tendency to it is thenceforth observable in an occasional purple patch.

A survey of Norman architecture in London gives occasion for a really useful, though necessarily brief, account of English Romanesque, its origin and characteristics. Included in this section are illustrations of St. John's Chapel in the Tower of London, of the choir and ambulatory of St. Bartholomew's the Great, of details of the Temple Church, of the nave of old St. Paul's, after Hollar; and of the apse of East Ham Church.

Gothic is dealt with in three sections, relating respectively to the thirteenth, fourteenth, and fifteenth centuries. Early English is represented by Southwark Cathedral, by portions of work in Lambeth Palace Chapel, and by several details from Westminster Abbey. "The birth of Gothic architecture occurred in the last quarter of the twelfth century," and having thus prosaically announced it, the author allows himself to hail the nativity in dithyrambic prose as—"a magical transmutation revealed itself as the wondrous grace of a flower is unfolded from the lesser beauty of its parent plant." Certainly it is an occasion for exuberance; and in fairness it must be acknowledged that the contemplation of actual work invariably steadies his style, without ever degrading it to the dead level of guide-book diction.

It is no more than just that considerably more than half the book should be given to Renaissance work. The Great Fire of London foreordained this disproportion; although, earlier than that—in the Tudor times—as Mr. Godfrey shows—the New Learning had begun to make itself felt in England; yet "so stubborn was the Gothic tradition in this country that it [Renaissance] could not become naturalised until the reign of Elizabeth, and then only in a mingled form—Renaissance design indeed, but with a strong Gothic flavour." Hampton Court figures largely in the treatment of Tudor Gothic, and it is here seen why the author has gone so far afield. Leave out Hampton Court, and not many examples of Tudor Gothic would remain besides those derived from Westminster Abbey, although there are somewhat meagre references to work of minor importance elsewhere; and the gatehouse and old buildings of Lincoln's Inn are piously included.

The section on the Early Renaissance in London opens with the statement that "the reign of Queen Elizabeth was our Augustan period of literature," as we are disposed to agree that in fact it was, in spite of the more common attribution of that hackneyed description to the eighteenth century; for, although Anna Regina stands for more elegance and refinement, Elizabeth has it for incomparable vigour and daring. Mr. Godfrey says rather finely that "We must not look for the cold science of the imitator until this strange, new fire had been quenched by many years;" although perhaps the fire is even now not quenched, but merely smouldering.

In this section and thenceforward, the author must have found himself embarrassed not by the paucity but by the plenitude of examples. Inigo Jones, and more especially Wren, provide an overwhelming mass of material, and Mr. Godfrey seems to us to have made his selections with excellent discrimination. Among the illustrations to the section on the Mid-Seventeenth century are a photograph of the George Inn, Southwark, and, for comparison with it, as showing the evolution of the theatre, a drawing by the author in which the Fortune Theatre in Golden Lane is reconstructed from the specification preserved in Dulwich College. One's recollection of the illustrations in, for instance, Mr. Fairman Ordish's "Early London Theatres" suggests the perhaps mistaken idea that Mr. Godfrey's drawing is over-elaborated. In particular, the stage looks more permanent and substantial than the crude platform of planks on props which was designed for easy removal when the arena was required for cockfighting, wrestling, bouts with the quarterstaff, sword-and-buckler combats, etc., and was minus the balustrading shown in Mr. Godfrey's reconstruction, which, however, is no doubt in accordance with the specification.

The Later Renaissance and the Georgian period provide many handsome and decorative details, the elaborate external doorways of those periods being chiefly conspicuous in the selection, although there are a goodly number of characteristic interior designs, the Adam period receiving due attention.

With a very short account of Robert Adam the book virtually and somewhat abruptly concludes. The nineteenth century is scarcely touched upon, as if it had added nothing to the history of London architecture. Granted that to select for description—and still more to venture on criticism of very recent or contemporary work—is to enter upon an exceedingly delicate task, the author might nevertheless have added considerably to the interest of his book, besides redeeming it from the charge of incompleteness, if he had included a few representative examples of the buildings of to-day. Surely there could be no invidiousness in showing a few specimens of the more monumental of our modern buildings. Indeed, the author tacitly admits this by illustrating, with a sketch that does but scant justice to his skill as a draughtsman, the Roman Catholic Cathedral at Westminster. We hope that in future editions, which will most certainly be demanded, the author may see his way clear to the inclusion of a few modern buildings, which, if haply they may not yet be considered to be historical (but is lapse of time really essention to that qualification?) must, barring accidents, eventually come into the category. In the meantime it is the modern buildings which make London what it is to-day, notwithstanding the dominating effect of the Abbey and St. Paul's, and we venture to believe that very many purchasers of the book will be disappointed on finding that the author has expressly and deliberately refrained from bringing down his extremely interesting narrative to no later a date than the year 1800.

Nevertheless, he has produced a wholly delightful and even a fascinating book, in which the old-time architectural charm of London is more winsomely revealed than in any work of similar size and scope that we remember to have seen.

A History of Architecture in London, arranged to illustrate the course of Architecture in England until 1800, with a sketch of the preceding European styles. By Walter H. Godfrey, architect. With a preface by Philip Norman, LL.D., F.S.A. With 250 illustrations, seven maps, and descriptive Guide to the Buildings. Pages xxiii. + 396, 8½ins. by 5½ins. 7s. 6d. net. London: B. T. Batsford, 94, High Holborn.

ENQUIRIES ANSWERED.

Covenant as to Practice.

X. Y. Z. (Midlands) writes: "A was articled to B, and in the articles there is the following clause: 'A covenants with B that he, the said A, shall not without consent in writing of the said B at any time hereafter open any office or hold out himself as practising the profession of an architect and surveyor on his own account or as clerk to or in partnership with any person or persons in the town of C—— or within a radius of six miles of the parish church of C—— and in case the said A shall commit any breach of this covenant the said A will pay to the said B the sum of £200 as liquidated damages for such breach thereof.' Now A has taken an office outside the radius of the town of C——, and, should he do any work within that radius, although his office is outside of it, would he commit a breach of his covenant and be liable to forfeit £200?"

—It is reasonably plain that, in the circumstances above mentioned, A would commit a breach of his covenant, which is perfectly reasonable and capable of being enforced. It can clearly be stated, upon he authority of numerous cases, that to solicit or execute orders in the prohibited area is to infringe a restrictive covenant. n Turner v. Evans, 2 De G. M and G., '40, the question was raised whether nerely soliciting orders—e.g., sending ravellers within the prescribed area—con-tituted carrying on a trade there, and it was held that it was. Again, in Lake v. Harrison, 13 T. L. R. 568, it was held that a person who contracted not to carry on he business of a patent agent within four miles of Chancery Lane, and who set up n business outside the radius, could not onduct applications at the Patent Office. Upon these authorities it is clear that A ould not therefore superintend the building of a house inside the prohibited area. B must wait, however, until he has evidence of an actual case of interference be-ore he moves in the matter. He could hen obtain an injunction in addition to payment of damages.

Retrospective Articles.

W. B. W.—What we understand from our letter is that having now served for ive years you wish to have something in he nature of "Retrospective" articles rawn up as between you and your employer. We have not heard of any similar ase, nor do we quite see why it should be necessary to do so; there is, as far as we know, no legal necessity for articles at ll in the case of the architectural pro-ession, though there is in the case of those rofessions where registration is in force. The R.I.B.A. do not appear to attach so reat significance to the matter of articles s to that of education in some recognised chool, or the passing of their examina-ons.

We should say that all that is necessary s that the employer should give a certi-cate of the period of pupilage, and a testimonial to the effect that this period as been passed by the pupil entirely to is satisfaction.

Assistant Surveyorship, Ireland.

C. H. L. V. asks for information as to ppointment as Assistant Surveyor, Board f Public Works, Ireland. We believe here is no fee for nomination to compete in the examination held by the Civil Ser-ce Commissioners, and no special form application, but written application hould be made to the Secretary, the Office Public Works, Dublin, enclosing copies recent testimonials, and giving full par-culars as to age and other qualifications.

Candidates will be notified on obtaining nominations, and no other qualification will exempt candidates from the examination. The subjects of examination are—(1) English composition and writing of business letters; (2) drawing, architectural design, and construction details (and theory); 3, quantities; 4, estimates and specification; 5, materials; 6, surveying and levelling; 7, sanitary science; there is an oral examination in 5 and 6, and a medical examination. Successful candidates will be on probation for two years, the limits of age are from 24 to 30.

BUILDERS' ACCIDENT INSURANCE.

From an abridged report of the thirtieth annual general meeting of the Builders' Accident Insurance, Ltd., at which, in the absence of Mr. T. F. Rider, chairman of the association, through illness, Mr. H. H. Bartlett took the chair, it appears that Mr. Rider, in his address (which was read by Mr. Bartlett) expressed his regret that the experience of this company accords with that of all other insurance companies in finding that the cost of claims under the Employers' Liability Acts continues to increase, and to exceed considerably the premiums now charged. The reasons for this, he continued, are various, and many of them, doubtless, within the knowledge of those whom he was addressing. The principal one arises from the fact that men are not now satisfied with receiving half wages during the period of their incapacity (as provided for under the Act), but almost invariably demand an additional payment of a sum of money before returning to work, which by the terms of the Act as now interpreted they are able to do. It was obviously never intended that a slight injury, creating probably a liability of two or three pounds, should involve the employer in an expenditure in legal expenses in carrying through the processes to get clear of the liability entailed upon him by the Act of possibly ten times the amount of the compensation. This, Mr. Rider contended, surely was never intended by the Legislature, and the Government should certainly be called upon to make such an amendment of the Act as, whilst not affecting the protection of the workmen, should relieve the employer of an oppressive and unnecessary burden.

Turning to the accounts, the premium income is £28,541 7s. 1d. against £23,577 6s. 3d. in 1909; dividends, £596 13s. 8d. against £598 10s. 4d.; and interest, £77 15s. 3d. against £83 4s. 8d. On the other side of the account, claims have cost £28,014 0s. 2d. (of which £18,362 1s. 4d. was on account of old cases) as against £22,435 12s. 6d. in 1909, when £13,426 2s. 3d. was for those of former years. Commission £917 12s. 3d., against £961 4s. 6d.; management, £2,810 1s. 8d. against £2,757 8s. 2d.; loss on investments, £416 12s. 3d. against £367 14s. 0d.

Great regret was expressed at the resignation of Sir John Mowlem Burt, on the ground of continued ill-health. He was for many years a director of the company, on whose sound judgment and unfailing loyalty the Board could always rely.

With reference to the death of Mr. Howard Colls, he could hardly trust himself to speak. Mr. Howard Colls was a personal friend of his for forty years. No man ever had, or deserved to have, more friends, and he had not, nor deserved to have, a single enemy. Many were the kindnesses he showed, and much was the good he wrought, and the world is poorer for his leaving it. Of Mr. Krauss, too, Mr. Rider could speak from personal knowledge in the highest terms as a respected colleague, whose advice was always sound, and support always to be relied on. The Board had been fortunate in securing, as colleagues, Mr. Charles Wall, J.P. (Messrs. Chas. Wall, Ltd., London), and Mr. W. F. King, whose names are household words in the building trade. The directors had used every effort to conduct the affairs of this company in the most efficient manner possible, a matter becoming increasingly difficult, not only from the new class of claims continually arising, but from the more litigious and harassing manner in which they are dealt with, a manner never contemplated when the Act was introduced, and which, while notably increasing the anxiety of the business, had been of small benefit to those in whose interest it was passed. Everything points to a further increase in the premiums, as instanced in the speeches of the chairmen of insurance companies whose annual meetings have already been held, for it is obvious that undertakings like these are not benevolent institutions, but business combinations to be run on business lines, always bearing in mind the well-known phrase of economy to the utmost extent, combined with that of efficiency, which alone can give stability to an undertaking.

The report and accounts were unanimously adopted.

The retiring directors, Colonel Trollope, Mr. J. Stevenson Jones, and Mr. C. H. Barnsley, were re-elected, and the directors' fees fixed at the same amount as last year. Mr. Charles Fox was re-elected auditor.

ALL SAINTS' INSTITUTE, POPLAR

This new building, which is situated in Newby Place, Poplar, adjoining the town hall, and opposite to the fine parish church, was formally opened on July 1st by the Bishop of London. It will be remembered that the foundation stone was laid last year by H.R.H. Princess Henry of Battenberg. The Bishop expressed his appreciation of the care the architects had bestowed upon what would stand out as one of the best works of its kind. The building has been erected partly on the site of an old parochial school, and partly on a portion of the rectory garden. It comprises, on the ground storey, corridors, entrance hall and three club rooms, a gymnasium, and a billiard-room. On the first floor: A hall capable of seating 350 to 400 persons, with a stage and retiring rooms. There are also lavatories and cloak rooms. A kitchen is provided on the mezzanine floor for service in connection with the various guilds and clubs now to be housed here instead of being scattered about the parish. The frontage next Newby Place is of Portland stone and red bricks (Renaissance). The joinery throughout is of pitch pine polished. The floor of the ground storey is of pitch-pine blocks, and that on the upper storey of pitch-pine boards polished suitable for dancing. The building is lighted by electricity and heated by radiators; hot water at low pressure. Messrs. J. and W. Clarkson, of Poplar and Bloomsbury, are the architects, and Messrs. F. and H. F. Higgs, of Loughborough Junction, the contractors.

Change of Address.

Messrs. Hukins and Mayell, architects and surveyors, have removed their offices from Bank Chambers, 76a, Westbourne Grove, to 124, Westbourne Grove, after being over thirty years at the first-named address.

ST. PAUL'S BRIDGE.

The following letter, dated July 3, from Mr. Leonard Stokes, as President of the R.I.B.A., has appeared in the "Times":

"Sir,—On many occasions during the past year you have been good enough to give publicity to criticisms which the Royal Institute of Brtish Architects has directed against the action of the Corporation of London. It is therefore with special pleasure that I have to ask you for space to enable me to give expression to our warm appreciation of the wise and large-minded decision of the Corporation which was announced in your issue of July 1st. In appointing three architects of acknowledged eminence to advise them in dealing with the great architectural problem involved in their proposals for a St. Paul's Bridge they have taken a step which must meet with universal approval."

Surely this is to be over-grateful for very small mercies. For our part, we do not find it so easy to forget and forgive the action of the Corporation in obdurately refusing to take, upon the urgent recommendation of the entire body of artistic opinion, the course it has only adopted after Parliamentary pressure. But, after all, it might have done worse!

INSTITUTE OF MUNICIPAL ENGINEERS.

At a meeting of the Council held at 39, Victoria Street, W., on June 25th, from the applications recommended for admission at the last meeting 4 members and 2 associate-members were elected, and 2 transfers were made to associate membership. It was decided that the first examinations of the Institution be held in the week commencing Monday October 30th next. Applications to sit must reach the secretary not later than September 13th. The Council had before them the question of the supply of light refreshments at meetings, as is the practice with many other institutions. It was decided that having regard to the fact that some 50 or 60 meetings are now being held annually by the Institution—four were held during the last week—the Council could not see their way to adopt the practice.

B. Wyand, Secretary.

The annual meeting of the Western District will be held at the Crown Hotel, Worcester, on Saturday, July 15th, at 3 o'clock, when the following business will be taken: Election of district chairman and hon. district secretary; programme for ensuing session; paper "Municipal Engineering as a Profession," by Mr. B. Wyand.

CORRESPONDENCE.

Gidea Park Exhibition.

To the Editor of The Architects' and Builders' Journal.

Sir,—I notice, at the Gidea Park Exhibition of modern houses and cottages, that only one house outside the prize-winning design has been considered by the judges worthy of commendation.

An inspection of this highly commended building is very disturbing to my apparently old-fashioned ideas and early training in the profession. A proper disposition of the fireplace in a room has always been with me an important point, but it would appear that to fall over the fender, as it were, upon entering the room, is to be highly commended; and in the case of some of the rooms, should the occupant foolishly leave the door open with the fire alight, the former must of necessity become badly scorched. Perhaps the fireplaces are merely ornamental, or are the doors to be used as fire-screens?

Again, a point I have had instilled into my mind from pupilage days, and have always endeavoured successfully to avoid, is placing the larder against a w.c. Not only is it thus in the house in question, but one window is used for both, and the casements are so hung that when both are open any foul air blowing out of the w.c. window is directly encouraged to enter that of the larder. This method is highly commended.

I see many other houses in the exhibition better planned to avoid these defects, but such are evidently not worthy of encouragement; and if we are to be guided by our expert brethren in high places we must drop these long-cherished ideas as being quite out of date.

A Common or Garden Architect.

Centre of Pressure in Masonry Joints.

To the Editor of The Architects' and Builders' Journal.

Sir,—May I point out through your columns a few printers' errors in the article on "Centre of Pressure in Masonry Joints," in your issue of June 28th?

Example on "Solid Circular Column" (column 3):—

After $A=\pi r^2$, read

$$\therefore\ x=\frac{\frac{\pi}{4}r^4}{\pi r^2 r}=\frac{r}{4}\left(\text{or }\frac{d}{8}\right)$$

Example on "Hollow Circular Structure" (column 3).—

Read $R=5$ft. instead of $R=S^1$ as printed.

Example on "Hollow Square or Rectangle," 4th line from bottom of column 3, the fraction $\frac{1}{12}$ is omitted, should read

$$x=\frac{\frac{1}{12}(BD^3-bd^3)}{(BD-bd)\frac{D}{2}}$$

May I further state that, in the last example, viz, "Square Chimney," the general symbols B, D, b and d have been used, because they cancel out.

The result might have been obtained entirely in terms of D and d, because $B=D$ and $b=d$, thus:—

$$\text{Generally, } x=\frac{I}{Ay}$$

$$\text{But } I=\tfrac{1}{12}(BD^3-bd^3)$$

$$\text{or, in this case}=\tfrac{1}{12}(D^4-d^4).$$

$$A=(BD-bd)$$

$$\text{or } (D^2-d^2).$$

$$y=\tfrac{D}{2}.$$

$$\therefore\ x=\frac{\frac{1}{12}(D^4-d^4)}{(D^2-d^2)\frac{D}{2}}$$

$$=\frac{1}{6}\,\frac{(D^2+d^2)}{D}$$

But $d=.75D$

$$\therefore\ x=\frac{1}{6}\left\{\frac{D^2+(.75D)^2}{D}\right\}$$

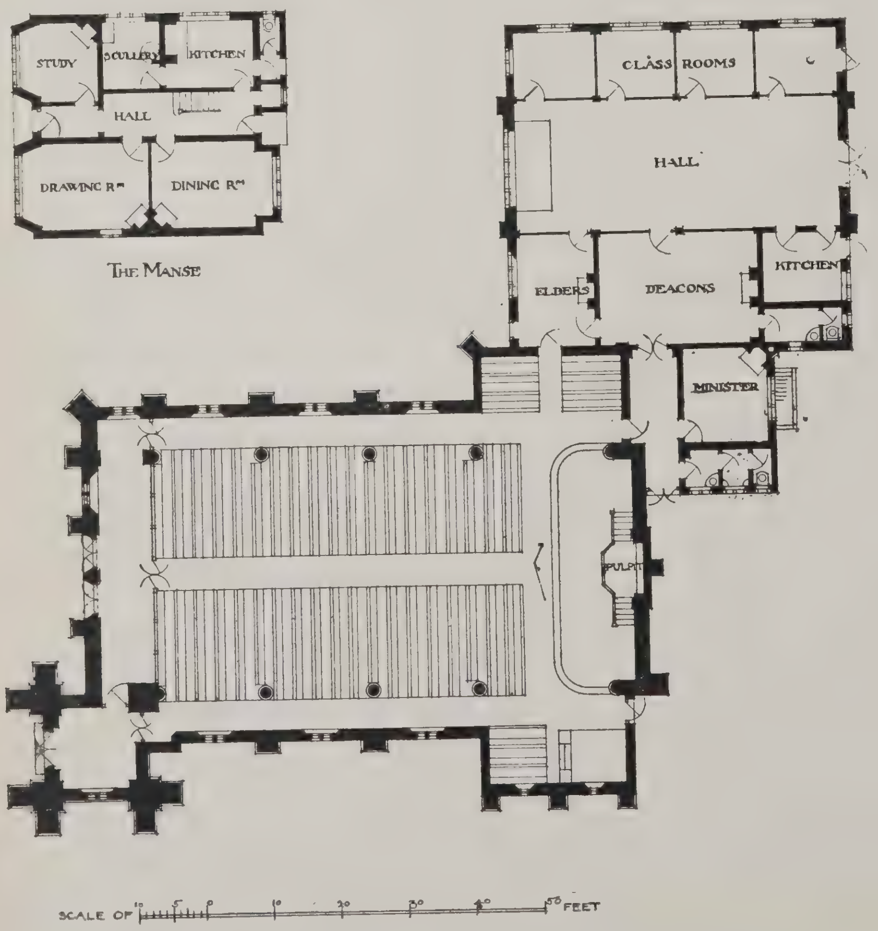
$$=\frac{D}{6}(1+\cdot75^2)\text{, as before.}$$

Halifax.

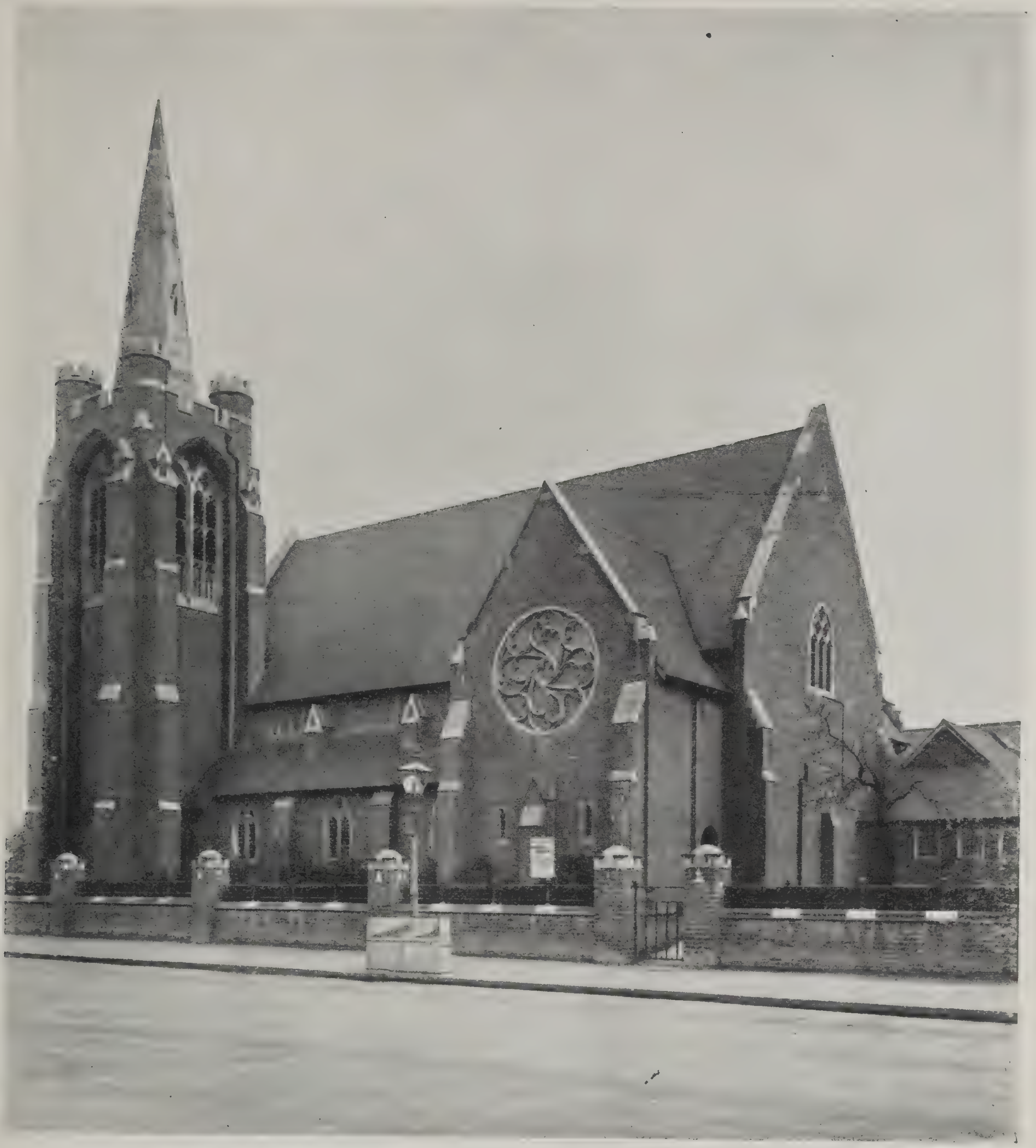
F. E. Drury.

GRANARD PRESBYTERIAN CHURCH, PUTNEY.

These buildings were erected from the successful design in a small limited competition. The church accommodates 420, and has schoolroom and classrooms communicating with it; and the minister's house is also included in the scheme. The buildings are of red brick with Bath stone dressings. The total cost was £7,300. The contractors were Messrs. Wm. Johnson and Co., Wandsworth Common, and the architect was the late Mr. E. W. Mountford, F.R.I.B.A.



GRANARD PRESBYTERIAN CHURCH, PUTNEY. GROUND PLAN



GRANARD PRESBYTERIAN CHURCH, UPPER RICHMOND ROAD, PUTNEY
THE LATE E. W. MOUNTFORD, F.R.I.B.A., ARCHITECT.

NEWS ITEMS.

Change of Address.

Messrs. J. Wardell and Co., manufacturers' agents and merchants, have removed into more commodious offices in Westminster Chambers, viz., No. 3, Victoria Street, Westminster, S.W. Their telephone number and telegraphic address will be as before.

A Large Manchester Building.

Great progress is being made with the new premises of the Calico Printers' Association in Manchester. The work, which was begun in April last year, will be completed by next September. It will then be the largest commercial building in Manchester, covering an area of 6,454 square yards, with a frontage to Oxford Street of 306½ ft. The material used is steel, encased in concrete, and the windows are steel casements; the floors are of hollow bricks on the Kleine system, and the staircases of reinforced concrete with closed brickwork. There will be twelve shops on the street frontage, and a public safe deposit in the basement. The contractors are the Building Construction Co., Ltd., of London.

The Historic London Club.

The Historic London Club, which during the last four years has accomplished excellent work in promoting the study of the architecture and antiquities of Old London, has acquired new premises at 1, Adam Street, Adelphi, where the reading-room has been restored to its original eighteenth century condition, the fine ceiling, with its Angelica Kauffmann centre-piece, being the only one left in the building. The room has been furnished in a style contemporary with the house, and is lighted solely by wax candles in Georgian candelabra. The club has recently acquired three panels from the Lord Mayor's state barge, which was broken up about fifty years ago. These are fine paintings on copper, the City arms and insignia being richly gilt. Anyone interested in these relics may see them by calling on the hon. secretary, the Rev. E. Shoolbred. The reading-room is well supplied with books and maps illustrating ancient London, which may be inspected on application.

An Interesting Model.

An interesting model has lately been executed by Mr. John B. Thorp, of 98, Gray's Inn Road, for the arbitration case between the National Telephone Co. and the Post Office. The model, the base of which measured about 8 ft. by 4 ft., was made to illustrate a town and surrounding country with the various systems of running telephone wires, both overhead and underground, crossing roads, railways, parks, etc. A railway ran through the centre, and above and below were the various systems of wiring. It showed about 100 houses, all connected up to some seven exchanges, and something like 80 telephone posts were used. The houses were made of yellow pine and the posts boxwood, with small pins for insulators, while copper coloured silk was used for the open wires and tinned wire for the conduits and cables.

St. Magnus Cathedral.

The Scottish Court of Session have granted the petition by the Provost and Magistrates of Kirkwall for authority to form a fund of £9,000 for the upkeep of the works of restoration of St. Magnus Cathedral, Kirkwall, out of the bequest of the late Sheriff Thoms. According to the scheme put in and approved by the Court the interest of the fund will be expended in meeting the cost of the general upkeep of the fabric of the Cathedral, and of the heating and cleaning of the Cathedral, and the maintenance of the general fabric.

New Site for a Chelsea Hospital.

Lord Cadogan, who has for many years given his support to the Chelsea Hospital for Women, has promised to give a new site, the present site being altogether too small, and so close to a roadway full of traffic that the patients are never free from noise. The accommodation for nurses and out-patients is also unsatisfactory. At present nothing has been settled as to removal of the hospital, but the new site will be not far from the present one, and will cover not less than an acre and a quarter of land.

SOCIETY OF ENGINEERS.

The third vacation visit of the present session took place on July 7th, when, by permission of the Associated Portland Cement Manufacturers (1900), Ltd., a number of members of the Society and their friends visited the Swanscombe Northfleet Cement Works. It was at Northfleet that the earliest cement works were erected by the younger Aspdin, whose father had invented the product in 1824, and subsequently other works were erected by firms whose names have since become world-famous. The majority of these firms were combined in one company in 1900.

The district in which these works are situated is peculiarly adapted to be the centre of the cement industry on account of the presence of unlimited supplies of chalk and clay, an ample quantity of fuel, and ready access to all parts of the world through the Port of London.

The visitors were shown the chalk quarries adjoining the works, and the clay brought from the Medway. The amalgamation of chalk and clay in definite proportion is effected by batteries of washmills, the resulting slurry passing through a screening mill in a finely divided state. The slurry then passes into the large mixing and storage tanks, and is finally pumped into rotary kilns, in which the contained water is evaporated, and the dry material thus obtained is heated up to a temperature of about 2,800 deg. Fahr.

The hot clinker then passes through rotary coolers, which extract the heat, and from thence is delivered to the grinding mills, in which the clinker is reduced to a very fine powder. During the final stage of the grinding process steam is injected into the mill, subjecting each particle of cement to a repeated process of superficial hydration, thus regulating the setting time, and turning out the cement in a condition for immediate use, thereby obviating the trouble of turning over the cement before use on the site of works.

The visitors were shown the cooperages, where casks for packing cement for export are made by machinery, many of the machines being of a special character, and patented by the Company.

Tea was provided by the Company for their guests at the conclusion of the visit, after which a vote of thanks to the Company for their courtesy was proposed and heartily accorded.

IN PARLIAMENT.

(By our Press Gallery Representative.)

The Royal Gate of Kyoto.

In the House of Commons Captain Jessel asked Mr. Dudley Ward whether his attention had been called to the fact that the replica of Chokoshi More, or Royal Gate of Kyoto, which was presented by the Japanese Government, and which had been now erected at Kew Gardens, was showing signs of discolouration, and whether steps could be taken to place the gate in a less exposed position.

Mr. Dudley Ward said the First Commissioner of Works was advised that the discolouration, which was very slight, was no evidence of deterioration, but the result of the action of light and air upon light-coloured wood, and was a perfectly natural process, of which the Board's advisers were aware no action appeared to be necessary.

Scattered Public Offices.

Mr. Courthope asked whether the offices of the Board of Agriculture and Fisheries were still scattered over a wide area in a considerable number of different buildings; if so, for what reason work had been discontinued upon the new offices in course of erection for the Board, and whether he would take steps to expedite completion of these offices.

Mr. Dudley Ward said the answer to the first paragraph was in the affirmative. The foundations and basement of the new offices had been finished, but the plans for the contract for the superstructure had been delayed by the heavy pressure in the Office of Works in connection with the preparation for the Coronation. The urgency was recognised, and the completion of the plans was being expedited.

Natural History Museum Site.

Mr. Asquith, replying to the Earl of Ronaldshay, said he had received a memorial signed by a large and representative body of naturalists, affirming the necessity of maintaining in its integrity the site which was secured to the Natural History Museum by the delimitation of its northern boundary by the Treasury and the Office of Works in 1899.

The Coronation Barriers.

Mr. Churchill informed Mr. Douglas Hall that 83 wooden barriers were erected across streets adjoining the route of the recent Royal procession in London. It was found necessary to close ten for a longer or shorter period. As the accounts had not been made up it was not possible to specify the exact cost, but the cost was estimated not to exceed by much the amount expended on similar gates in 1902, which was £6,276.

Government Grant to Exhibitions.

Mr. Buxton, in reply to Dr. Addison, said a grant of £135.000 was made in respect of the three exhibitions at Brussels, Rome, and Turin conjointly, and it was not possible at present to state the cost of each separately. In the case of Brussels an additional grant of £57,100 was made for reconstructing the British section and to replace losses owing to the fire.

TRADE AND CRAFT.

A New Electric Cooking Range.

The application of electricity to cooking appliances had not hitherto received the attention it deserved, although it has been long perceived that, for cleanliness and purity, and for many other reasons, electrical energy should offer an almost ideal means of roasting, baking, and boiling. The Carron Company, of Carron, Stirlingshire, have conducted a most exhaustive series of scientific and practical experiments to determine the best method of applying electrical energy for distributing heat in the most effective manner for cooking, and with their accumulated experience of more than a century and a half in the manufacture of cooking appliances, and their exceptional facilities for conducting experiments under practical conditions, they have been enabled to evolve an electric cooking range which they can recommend as being reliable, efficient, and economical. The Carron electric combination cooking range consists of an oven for roasting and baking, two hot-plates for boiling, stewing, etc., a double grill and toaster, and a hot closet for keeping food warm, warming plates, or for slow cooking, and is equipped for the cooking-work of an average household. For the hot-plates and the oven there are two ranges of heat—that is to say, the temperature can be raised quickly and afterwards maintained at any lower degree with the minimum consumption of current, and the heating elements are so arranged that they can be easily renewed at small cost without returning the range to the makers. The oven is lined with polished nickel-plated steel sheets, with runners for shelves—two grid shelves and one sheet shelf. The grill has white enamelled sides and back, and is fitted with grill tins and and grids. Each range is fitted with two switches for the oven, one for each hot-plate, each switch giving two ranges of heat; while separate switches are provided for grills and hot closet, and two plugs and sockets for connecting to main cable. The firm also supply, on application, drawings and full particulars of electric cooking appliances for hotels, ships, and public institutions. In the same list are shown an electric hot closet and carving table and the Carron electric radiators, which are elegant and effective for interior heating, and are made in various patterns and materials for different services.

PLYMOUTH COUNTY COURT NEW OFFICES.

The County Court offices at Plymouth which has just been opened to the public are erected on a site on the south side o the Guildhall, part of which was formerl occupied by a number of out buildings, an the remainder included in the polic parade. Entering the Guildhall building by the door under the tower in Westwel Street, the public pass along the corrido behind the Western Law Courts to th main lobby of the County Court Office The plaint or public department is on th ground floor. It measures 43 ft. by 41 f and the several branch counters—for pa ing in, paying out, ordinary summonse and confessions, bankruptcy business, an High Court of Justice business—are a mirably arranged. There is special accom modation for the chief clerk, whilst in mediately adjoining are the Registrar rooms, the largest measuring 35 ft. by 17 f Three strong rooms and four store room all in the basement—containing over o hundred tons of ledgers, and bankruptc equity, Admiralty, company winding up, and other files—are reached by spiral stairways. Throughout the premises letter and book lifts are provided. The High Bailiff and bailiffs are accommodated on the first floor. The Chief Clerk's private room is 29 ft. by 18 ft., and rooms of similar dimensions are set apart for his clerks and outdoor staff. A wide flight of concrete steps descends to the main lobby. The second floor is occupied almost exclusively by the caretaker. A feature is the provision of a luncheon room for the clerical staff. Electric light has been installed, and great care has been taken to secure efficient ventilation and heating arrangements.

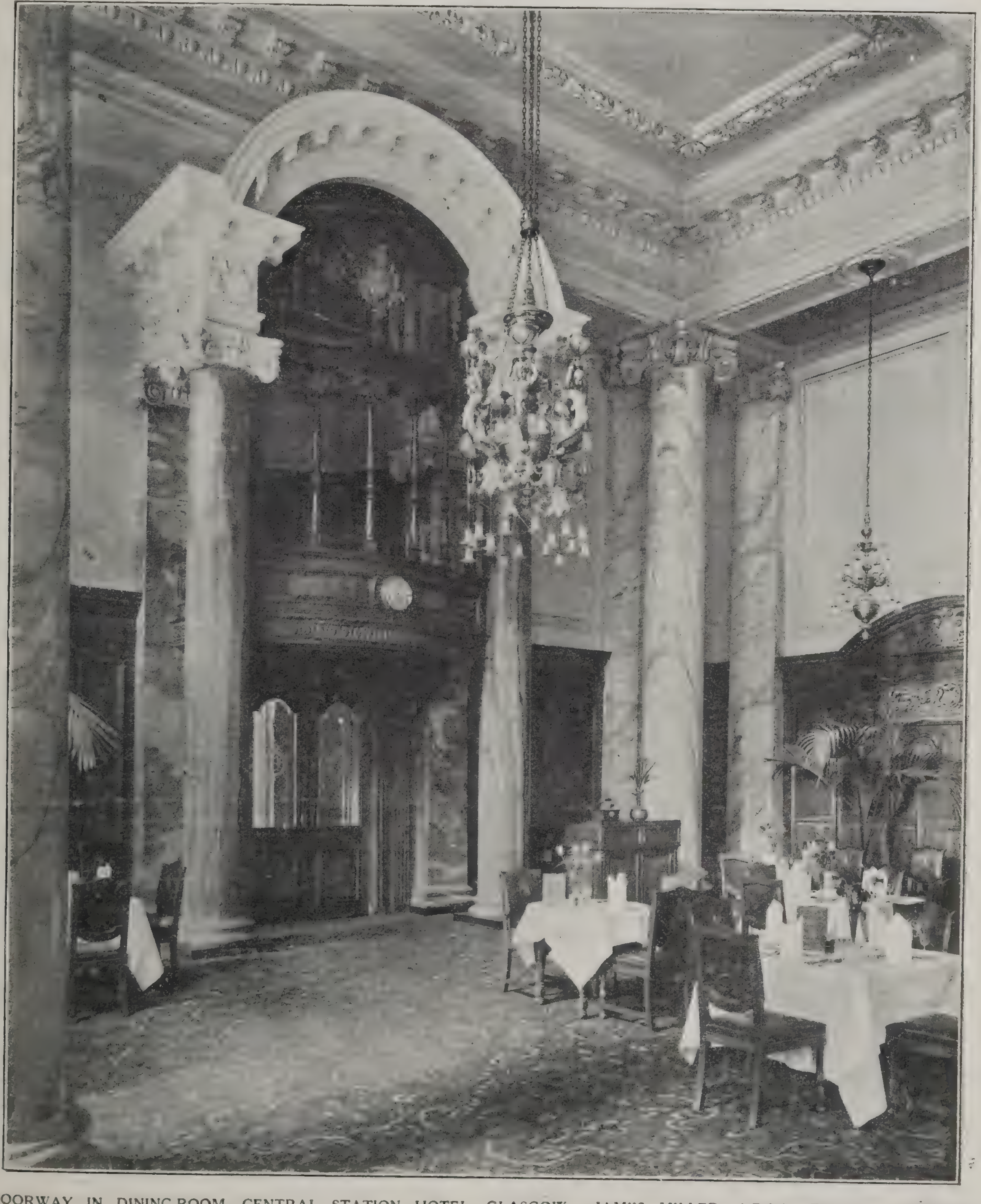
The new premises, rented from the Corporation, were built by Messrs. Pearn Bros. to plans prepared by the Borough Surveyor (Mr. James Paton). The contract price was £3,650. The basement is of local stone, the rest of the building being of brick.

THE PROTECTION OF ANCIENT CHURCHES.

The 22nd Congress of Archæological Societies in union with the Society of Antiquaries of London was held at Burlington House on July 5th, Dr. C. H. Read (President of the Society of Antiquaries) presiding.

The report, which was adopted, stated that the Council had passed a resolution to the effect that the position of the Society of Antiquaries in advising diocesan authorities on matters of church restoration should be strengthened by the grant of additional powers through the Royal Commission on Ancient Monuments (England), and recommending the appointment of the Society as the advisory authority for England and Wales, in all matters relating to the furniture, fabric, and monuments of churches.

Mr. P. M. Johnston, F.S.A. (Surrey), moved, as a rider to the Council's resolution, that the Congress, recognising the importance of local knowledge and influence, approve the step already taken by the Sussex Archæological Society in setting up a special committee to watch over the ecclesiastical antiquities of that county,



DOORWAY IN DINING-ROOM, CENTRAL STATION HOTEL, GLASGOW. JAMES MILLER, A.R.S.A., F.R.I.B.A., ARCHITECT.

to warn the Bishop of any threatened mischief to an ancient church, and to tender advice where a faculty was applied for in the Diocese of Chichester. Further, he asked the Congress to commend that arrangement to the consideration of other local archæological societies for imitation where circumstances allowed, such local action to be supplementary to the general powers sought to be obtained for the Society of Antiquaries.

Canon Warren (Suffolk Institute of Archæology) said it was felt in his county that a local body would encounter great hostility, most likely from the architect supervising the work, and it would therefore be better for action to come from the Society of Antiquaries than from local societies.

Ultimately Mr. Johnston's rider was carried unanimously.

FEDERATION NEWS.

Yorkshire Federation.

The monthly meeting of the Executive Council of the Yorkshire Federation of Building Trades Employers was held at the Royal Hotel, Grimsby, on June 16th. Mr. A. J. Forsdike, president, occupied the chair, and was supported by 49 delegates from the Federation Associations.

Votes of Condolence—Ald. W. Holdsworth, of Bradford.—On the motion of the President it was resolved to tender the sympathy and condolence of the Federation to the relatives of the late Ald. W. Holdsworth, of Bradford, a Past President of the National Federation, who for many years rendered most valuable services in extending the membership and improving the status of the building trade.

Labour Exchanges and Use of Rooms by Trade Unions.—A letter was read from the Labour Exchange Department of the Board of Trade pointing out that the general regulations under the Labour Exchanges Act provides that all applications for accommodation within the premises of a Labour Exchange is referred to the Advisory Trade Committee for the District, and the determination of the conditions upon which accommodation in Labour Exchanges may be granted falls within the discretion of such Committee.

Quantity Surveyors and Uniformity of Custom.—It was reported that correspondence had taken place between the Quantity Surveyors' Association and the National Federation with respect to the standardisation of quantities, with a view of securing uniformity in the preparation of quantities on lines mutually acceptable and agreed upon.

Treasurer's Report.—The Treasurer reminded members and Local Associations that it was absolutely essential that the Federation should be maintained in a most efficient condition, and especially at the present time when the interests of building trade employers were so vitally affected by current legislation. He therefore earnestly appealed for loyal co-operation and prompt payment of subscriptions.

National Insurance Bill.—The following observations were submitted:—

Barnoldswick: Strong objections to Clause 51.

Barnsley: Has the employer to continue contributions for unemployment arising out of weather or other causes, whilst the operative gets off scot free? and if so, who makes up the total amount? The association entirely agree with the observations of the Federation. How are apprentices affected by the Bill?

Bradford: Agree with Federation's observations, and have postponed detailed consideration to next meeting.

Grimsby: Strongly disapprove of Clause 51, and urge that the same should be deleted. That compounding of 15s. be not in respect of a specific workman, but in respect of a workman. That Clause II. (2) against lump sum settlements be deleted.

Hull: The proportion levied upon employers is unreasonable, as they do not benefit by the scheme, and building trade employers should not be singled out for part payment while the general public are exempt. Full opportunity should be given for mature consideration of Bill, and unemployment scheme should be abandoned.

Leeds: Consider that the Bill should be given most strenuous opposition, and that it is unfair to an overburdened and depressed industry, already subject to harassing conditions and intolerable financial burdens. In the event of the Bill not being defeated the amendments suggested by the Federation should be persistently and strongly urged.

Sheffield: Workmen's card should bear name of employer. Object to administration of the funds by trade unions, and claim right of employers to representation.

Wakefield.—The recommendations of the Federation met with the association's approval.

It was resolved to notify the Chancellor of the Exchequer and the President of the Board of Trade of the grave objections to several of the clauses of the Bill, to send a copy of the protest to local members of Parliament; and urge the National Federation to request the Chancellor to receive a deputation of building trade organisations in order that they may lay before him the disastrous effect which the Bill would have on an already overburdened industry.

Trade Unions (No. 2) Bill.—The Bill, as introduced into the House of Commons, was read and considered, and the Federation entered a respectful but emphatic protest against the preferential consideration continually being extended to members of trade unions, and their strong opinion that every step should be taken to safeguard the political freedom and personal independence of trade unionists from arbitrary and tyrannical acts of trade officials such as they have been subject in the past, by giving power whereby members could sue the union if an attempt is made to deprive them of society benefits.

Offices Regulation Bill.—The purpose of this Bill is to bring under inspection offices in which clerks are employed, by extending and applying the provisions of the Factory and Workshop Act, 1901, relating to the health and protection of persons employed in factories and workshops, to persons employed in offices. The Federation, while approving of sufficient and satisfactory accommodation being provided for clerks employed in offices, were strongly of opinion that the proposed legislation would impose most serious limitations upon employers, and in practice lead to considerable difficulty in prompt attention to urgent business.

Finance Act, 1910—Increment Value Duty.—Members were reminded of the promise of the Chancellor of the Exchequer that increment value duty would not be chargeable where the increase in value was due to the personal enterprise and forethought of the individual, and not to extraneous circumstances or conditions. Members were requested to state whether this promise had been observed in respect of cases in which they were personally concerned, or which had come under their observation.

Plasterers' Joint Committee of Appeal.—It was reported that the appeal of the Bradford Master Plasterers against the operative plasterers, who had applied for and been engaged on works outside the district, refusing to work except on payment of travelling expenses, while not directly successful, had, by a strong recommendation of the Committee, practically achieved the object for which the employers had appealed. The appeal of the Hull Association had resulted in the Hull N.A.O.P. agreeing to appoint the Local Joint Committee, and also in an interpretation being placed upon the local rules which coincides with that advocated by the Association for several years.

Legal Decision—Arbitrator's Judisdiction.—An interesting point has been raised before the King's Bench Divisional Court on a special case stated by an arbitrator and arising out of a dispute between the Yardley Rural District Council and the contractors for a sewage scheme. When the contractors sent in their account on the completion of the work, the Council's engineer was not satisfied, and refused to grant the final certificate, without which the contractor could not obtain payment. With a view to satisfying the engineer, the contractors sent in an alternative account, without either definitely cancelling the previous one or making any reservation that it was a proper and correct account. In accordance with the contract, the dispute was referred to arbitration, and it was contended for the contractors that both accounts should be considered. The arbitrator was of opinion that he had only jurisdiction to consider the second, but the Divisional Court held that he must deal with all matters in dispute, including both accounts, and that he had also jurisdiction to deal with the costs of the stated case, which would depend on the result of the arbitration.

National Federation Half-Yearly Meeting.—It was reported that the National half-yearly meeting would be held at Newcastle on Wednesday, July 26th.

Harrogate Member and Royal Baths Extension.—It was reported that representations had been made to the Harrogate Corporation in accordance with instructions of the Federation at the last meeting, and that a reply had been received that as the works covered by prime cost sums were let to independent contractors, which the Corporation claim they have a perfect right to do under the terms of the bill of quantities, the previous resolution of the Council will be adhered to, and no allowance made to the contractors for profits on work included as prime cost sums.

Privacy of Priced Schedules.—Mr. Rushworth, President of the Grimsby Association, drew attention to recent cases in which priced schedule of quantities had not been kept private, but used in a manner inimical to the contractor. He stated that if this experience again arose, the association might seek the advice or intervention of the Federation.

The next meeting will be held at York on Thursday, July 20.

The President and Members of the Grimsby Association invited the Council to visit Immingham Docks and subsequently to lunch. — J. DAVIDSON, Secretary.

York.

The members of the York Master Builders and Contractors' Association held their annual excursion on July 4th. The route was chosen to cover the moorland and coast district of Yorkshire. Arriving in Whitby shortly before 11, the party spent the morning in inspecting the ruins of the Abbey of Saint Hilda, the quaint abbey church, and other objects of interest in the town. At one o'clock luncheon was served at the Hotel Metropole, West Cliff, after which the party set off by motor for the moors. A detour was made from the route to cal at the picturesque village of Robin Hood's Bay and an enjoyable time was spent in inspecting the bay and the maze-like streets and alleys of this artist-haunted Yorkshire village. The course afterwards lay across the moors by way of Fylingdale Moor, Stainton Dale, Harwood Dale, and Ston Marl Moor, Hayburn, Cloughton, Burneston, Scalby and thence by way of the fine marine drive t Scarborough. The President (Mr. W. E. Biscomb presided at tea, at the Silver Grid Restaurant, an expressed his pleasure at the success of the ex cursion; and Mr. A. W. Sinclair, senior audito of the National Federation, dealt with some aspect of Federation work.—J. HAGUE, Solicitor, Secretary

Birmingham.

The Birmingham Building Trades Employers Association and Building Trades Exchange an Club joined hands this year for their annual summer excursion, which took place on July 3rd. Th party, numbering about eighty, went by train t Oxford, thence by steamer to Abingdon, where dinner was had at the Crown and Thistle Hotel. Som of the party spent the afternoon in inspecting th historical old town, but the larger number wen by steamer to Sutton Courtenay, a most interestin old-world village. The arrangements were carrie out by Mr. Ralph Webb, President; Mr. G. H Wright, secretary of the Building Trades Employers' Association; Mr. John Fawdry, President Mr. George Muskett, Secretary of the Buildin Trades Exchange and Club, and Mr. W. Marley.

London Association of Master Stonemason

The quarterly general meeting of the London Association of Master Stonemasons was held at Cannon Street Hotel, London, E.C., Mr. Fred Corben President, in the chair.

The secretary read a letter received from Messrs Geo. Trollope and Sons, and Colls and Sons, Ltd. thanking the members of the association for thei letter of condolence on the decease of Mr. J Howard Colls.

The National Insurance Bill was discussed, an the opinion which was unanimously expressed a a recent meeting of the Council of the London Master Builders' Association was endorsed, namel that "The Council [of M.B.A.] are unanimously opinion that if the additional burdens set forth i this Bill are to be imposed upon the trade, employers would be glad to see the principle extende so that their present risks under the various Employers' Liability Acts should be included in on payment." It was also decided that Mr. Stephe Collins, M.P. (vice-president) should be speciall invited to attend the next general meeting, an address the members on the subject of the Bill.

It was decided to organize a summer outing (t be held in July), and that the members should vis Bath on that occasion.

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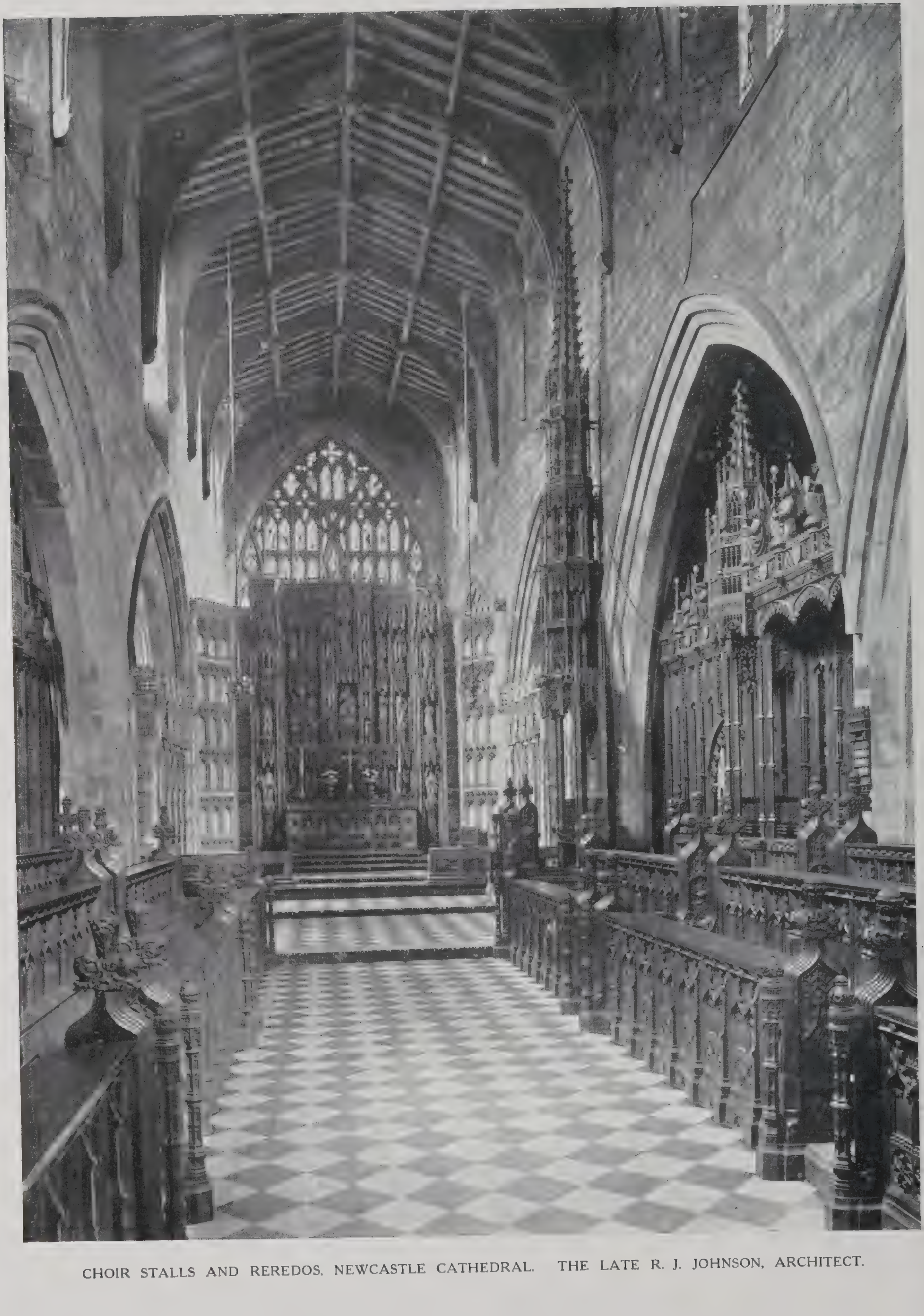
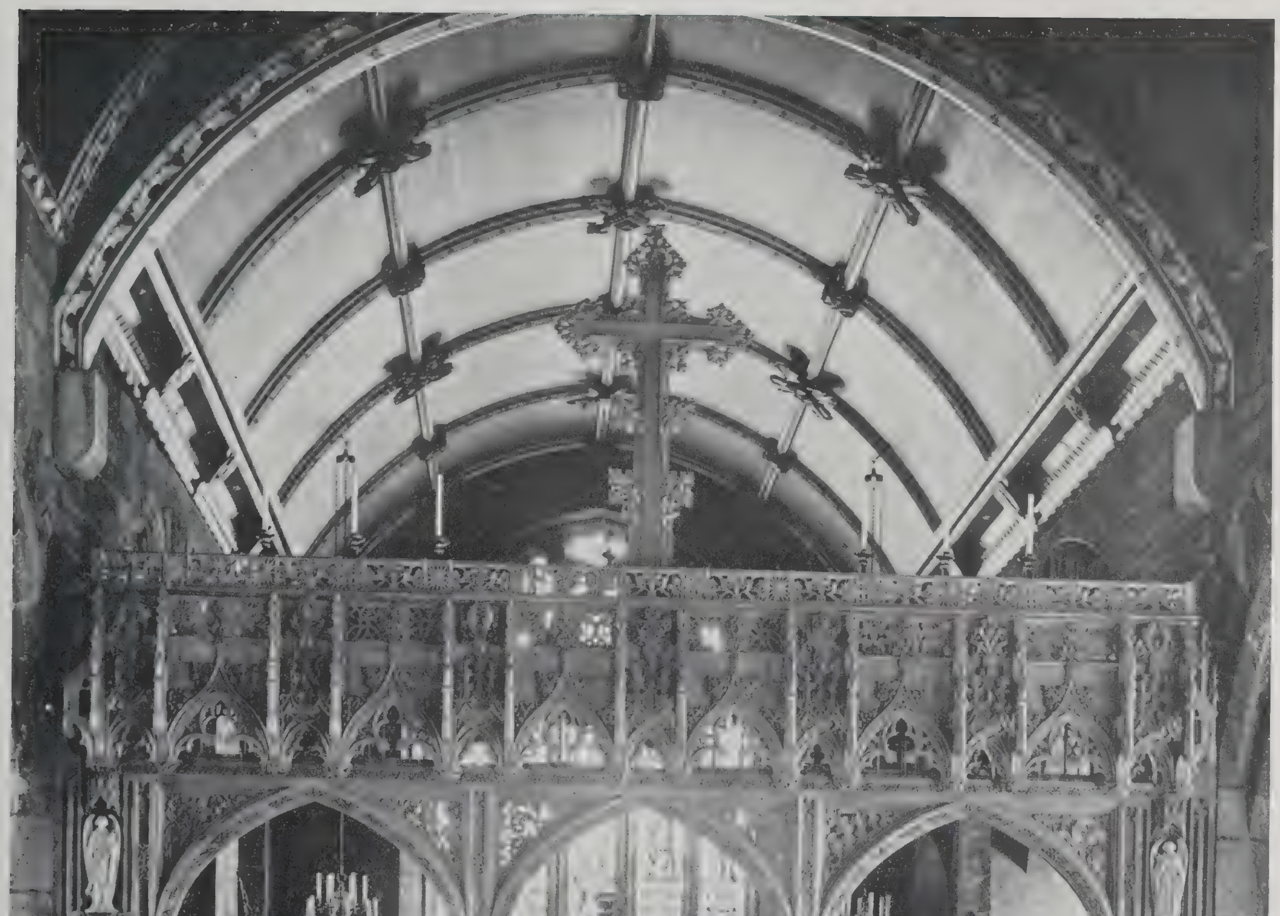


CHOIR STALLS AND REREDOS, NEWCASTLE CATHEDRAL. THE LATE R. J. JOHNSON, ARCHITECT.



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THE ARCHITECTS' & BUILDERS' JOURNAL.

WEDNESDAY,
JULY 19th, 1911.

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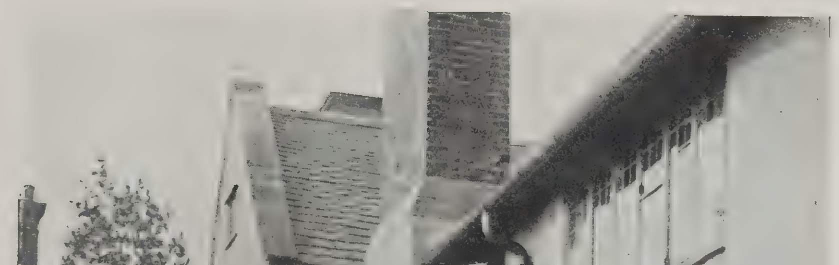
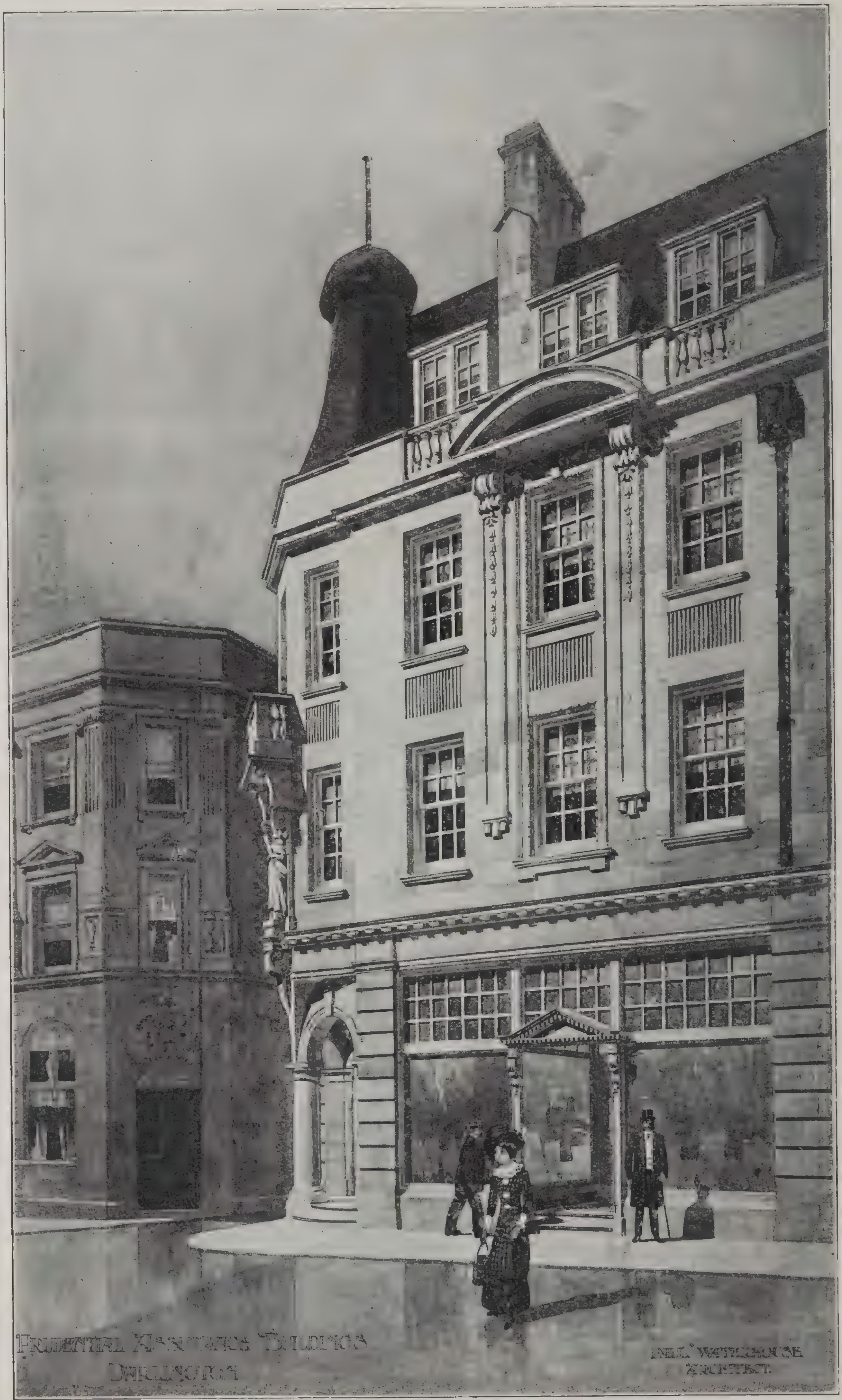


GARDEN ENTRANCE TO "THE HOMESTEAD," WOODBOURNE ROAD, EDGBASTON, BIRMINGHAM.

CHARLES E. BATEMAN, F.R.I.B.A., ARCHITECT.



(For particulars see page 63.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

JULY 19th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 860

NOTE: The List of Contents will be found on page IV. of the front advertisements.

A Way out of the Architectural Maze.

WE have before commented on the difference in the manner in which architecture is illustrated at the exhibitions of the Salon and of the Royal Academy; that at the former complete plans of a building are apparently demanded as a part of the exhibit—they are at all events always forthoming; while at the Academy plans are considered by many xhibitors to be of no consequence at all, provided a satisfacory picture of the building is produced; or if introduced, they re in general kept as small as possible, as if the exhibitor were shamed of them. But there is another and more remarkable ontrast between Salon architecture and Academy architecture t is this; that, taking any one year's show at the Academy as n approximate representation of the state of contemporary nglish architecture, it produces the impression that there is o fixed route, no determined goal in architectural design; at, as in the days when there was no king in Israel, "every an does what is right in his own eyes," and consequently we re met with sketches of eccentric character, in which the only bject seems to be to differ from everyone else; and others in hich the object appears to be to persuade spectators that the ew building shown in the drawing is an old building belonging a period when architecture was at the lowest ebb in regard dignity of expression or refinement of detail. In the French chibition we find none of these eccentricities. We see designs which, it may be said, there is rather too much resemblance, o much repetition of the same motives, but which convey the npression that they are the outcome of a generally accepted andard as to what is best in architecture. In other words, ere is a French School of Architecture. It has been a iticism of the French against us, that we have no school of t. "Il y a une peinture Anglaise," said an eminent French itic, but there is no "école Anglaise." In like manner there English architecture, but there is no School of English rchitecture.

The fact makes for interest and picturesqueness in a sense, doubt, but it is hardly the way to raise a national architecre to a high and important place in comparison with other tions. People may object that French architecture of toy is too academic, and that there is consequently a want of nuine and varied interest in it. The answer would be that ere is or should be something higher in national architecture an picturesque incident, and that there is a great advantage having a determinate aim in architectural style, to which all pable designers contribute; and that, whatever may be said academic architecture, the greatest and most satisfactory chitecture of any one period, that of the Greeks of the fifth ntury B.C., was Academic architecture, if the word means ything; more academic than any architecture of the present y in fact, since it appears to have laid down rules as to details ich more definite and drastic than even professors of architece think of exacting now.

It seems at all events desirable that education in architectural sign should be carried on with reference to some definite type of architecture. It is necessary that the student should be acquainted with the history of the leading styles of architecture; but that is a matter of acquiring knowledge, not of the study of design. It is somewhat bewildering to students to be required to study design in various styles, the constructional problems of which, as well as their character of detail, are quite opposed to one another. It is difficult for them to extract from these very diverse elements any central principle of architectural design; and moreover, this method of studying architecture in relation to various styles has naturally the effect of implanting in the mind the idea that architecture consists in the reproducing of this and that style of the past; an idea which has been fruitful in the production of merely imitative architecture, which is just what we wish, or ought to wish, to avoid. The French principle of teaching assumes that the architectural designs are based on Classic forms; the student is not required either to invent a style or to choose between one style and another; he has a style before him approved by the School; his business is to see how he can develop, out of that material, a plan and an architectural treatment for whatever class of building is set before him as a subject. He thus acquires the habit of directing his mind towards the satisfactory solution of that subject on broad architectural grounds; his attention is directed to problems of architecture, not of style. He may not, in actual practice in after-life, restrict himself to the style of the Ecole des Beaux-Arts, but he has to think of architecture as a problem in itself, and not as a question of accurately reproducing a style of the past; and that is really what the central object of architectural education should be.

In most cases, however, the French architect does continue to produce architecture of the same school as that which he has followed during his studies; the vagaries of what is called "l'art nouveau" have not produced any great effect on contemporary French architecture; and hence France may be said to have a School of Architecture, with its attendant advantages or disadvantages (according to the point of view of the critic), while we certainly have none. It may be urged that this influence of a school of architecture has the effect of deadening the art, of taking away the interest of individuals in architecture; on which side there is something to be said. On the other hand, it has the undoubted effect of keeping up a certain standard of excellence and a certain tradition, and of discouraging mere eccentricity in search of what is called originality. It is because this ideal of a School of Architecture is wanting in England that we have seen, for instance, the recent fashion of covering buildings with projecting blocks of stone having no meaning whatever; looking as if they were hung there, or as if they were left to be carved into ornament when there was time; a fashion entirely ephemeral, which will die out again in a few years, because it has neither meaning nor beauty, but is a mere fashion; and as Wren remarked (though he did not realise the full applicability of his remark), architecture should deal with that which is eternal. Now, the influence of a School of Architecture would be to prevent and discountenance such momentary eccentricities, partly because it sets up a tradition, partly because, according to the School, a detail must justify itself by a meaning and a distinct function in the design, and such details as we have just referred to have neither meaning nor function.

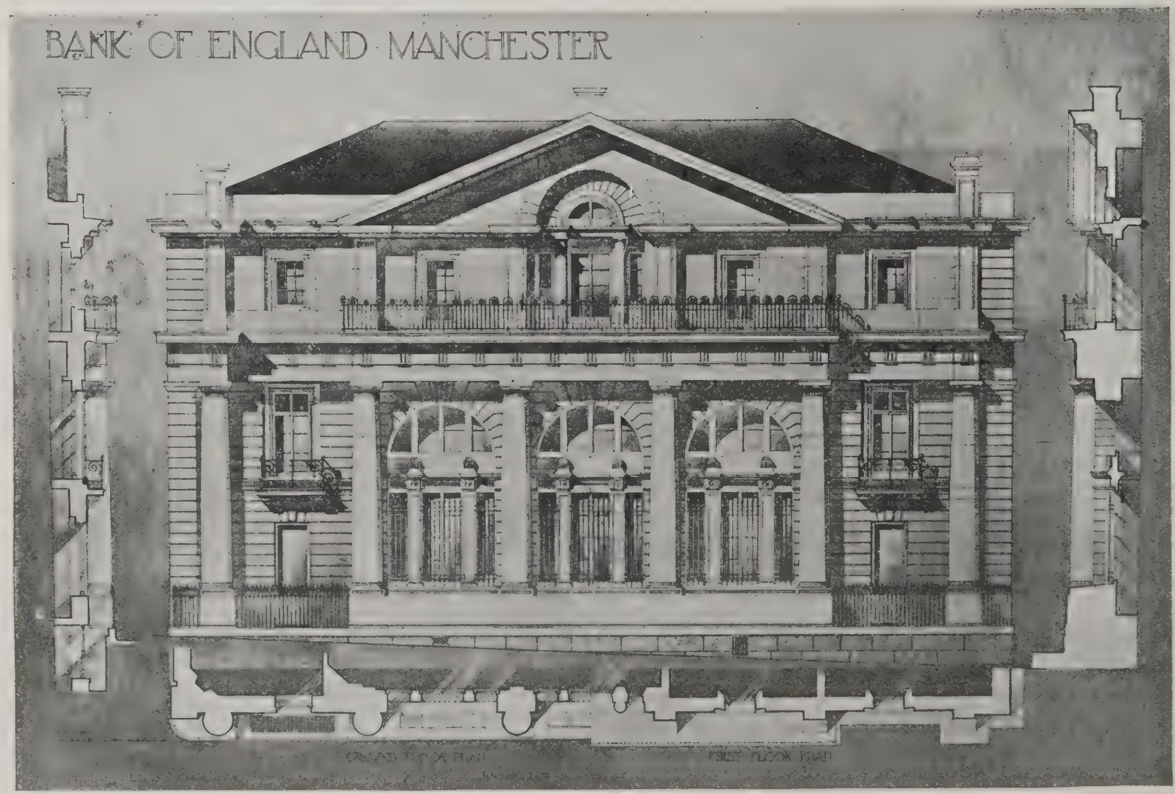
Can we have or develop a School of Architecture in England, such as there is in France, by way of giving a more consistent standard and purpose to our architecture, and getting rid of wandering into vagaries? There is a possible course which is a good deal exercising the minds of some thoughtful architects of the younger generation—that of starting again from Greek architecture, but developing and modelling it so as to be applicable to our climate and to modern conditions. By this, of course, is meant something quite different from the Greek revival of a century back, which was merely imitative, and was applied or misapplied in a mechanical manner. What is meant is rather a kind of neo-Greek developed out of the Greek type. If we are to develop anything from Classic types, it seems better to go to the artistic fountain-head than to revert to Roman, which was an imitation of Greek, or to Italian Renaissance, which for the most part was an imitation of the imitation, though not without an originality of its own. If the Renaissance Italians developed something of their own on the basis of Roman architecture, cannot we develop something of our own, and better, on the basis of Greek architecture? Cockerell may be said to have attempted this, and not without success, as in his two banks at Liverpool and Manchester, of one of which we give an illustration. They are perfectly suitable in architectural expression to their purpose; and though Cockerell took the larger features of his buildings from Roman rather than from Greek suggestion, his detail is Greek in character, and much better and more refined than most Roman detail. Duc also, in his Paris Law Courts, produced a building based on Greek suggestion, which is certainly admirably suited in architectural expression to its purpose.

The argument that our great national style was Gothic, and that this should therefore be the foundation of any new modern development, is not perhaps very likely to be advanced now; but it was a fallacy when it was advanced and acted upon in the last century, and would be an equal fallacy now, for the reason that we have entirely ceased to be mediæval. Our life in the present day is a great deal nearer to the life of the Greeks and Romans than it is to mediæval life. The antique life, that of the Romans especially, was a civilised life of culture; the mediæval life was not. The use of the columnar order as a form of architectural expression is a point more open to question, and would be a stumbling-block to many. But it is at least worth consideration, whether the Greek form of column and capital has not imposed itself upon architecture so far as to have become, in a great measure, a permanent element of architectural expression. It is not likely now that any civilised nation can throw it off and escape from its influence. If that is so, what remains is to make the best and most artistic use of it.

On the whole, this neo-Greek gospel of modern architecture seems worth serious consideration, as a means of laying the basis of a modern School of English Architecture with a definite tradition.

The St. Paul's Bridge Report.

THE architects who were called in to advise on the question of the line of St. Paul's Bridge have rather acted the part of Balaam; we looked that they should have cursed the scheme, and lo! they have blessed it altogether; at least two of them have, Mr. Collcutt having so far dissented from the Report as to add a note to the effect that he is of opinion that it would be possible to construct a bridge over the river giving a vista of St. Paul's, "which I should much prefer if found practicable." Apart from this rather half-hearted expression, the Report of the consulting architects is not calculated to raise one's opinion of their insight into the subject; in fact, some of the statements in it are little better than absurd. As to the statement that the Greeks "took especial care that the Parthenon should not be approached by a road leading directly up to it," there is not the slightes ground for supposing that they took especial care for anything of the sort. The Acropolis is an irregularly shaped rock, the



C. R. COCKERELL, ARCHITECT.

approach to which was made in the most convenient place, and the axial position of the main temple was probably settled on quite other grounds than architectural ones. The statement that Wren had purposely left the south side of St. Paul's plain, as an indication that he did not wish it to be much seen, may be left to take care of itself; it appears to be addressed to those who are supposed to have no eyes of their own; and it may be added that it is not a question of leading up a vista to "the side of a building," it is a question of a vista to the dome, which is the great central feature of the cathedral. The statement also that it would be almost impossible to design a satisfactory skew bridge in masonry is one that an engineer, from the point of view of construction, would laugh at, and that an architect, from the point of view of design, ought to laugh at. The proposed "skew" is very slight, after all, and it is nonsense to say that no satisfactory design could be made of it. The impression produced by the Report is that the architects concerned in it have not exhausted the subject; nor can one be quite without a feeling that the Corporation selected architectural advisers who they thought would be likely to support their scheme. Otherwise, why was Professor Pite omitted? Of all persons, he had the most claim to be professionally consulted on a subject on which he had shown better perception and more enthusiasm than anyone else. One point at least that he made in his evidence is likely to be remembered; on the question of underground tramways near St. Paul's. "Whatever you do," he said, "do not take the risk. St. Paul's is worth more to us n centuries than the tramways are in generations"; a very pregnant comment on the tendency of official authorities to place traffic lines above all higher considerations. So far, the Corporation have got their way, on the lines of a very weak Report; but whether they will ultimately secure it is another question, considering the tenor of a strong letter signed Tradition," which appeared in large type in the next day's ssue of the *Times*. In the meantime, suggestions have been made in the Press—suggestions which are quite worth serious onsideration—whether the amount which the St. Paul's bridge would cost would not be better spent in the erection of a wide ridge at Charing Cross, coupled with the removal of Charing Cross Station to the south side of the river. If Southwark Bridge, as has been proposed, were rebuilt with more workable radients, the need for another bridge in that district would not e nearly so great as the need for one at Charing Cross. Con-dering what an important centre Charing Cross is, it is eplorable that there should be no means of getting to the her side of the river from there except by going a long way und, over Waterloo Bridge one way, or over Westminster ridge the other way; not to speak of the increasing importance Waterloo as a terminal station, to which there ought to be a ore direct access. Two excellent plans for such a bridge have een exhibited at the Royal Academy; one by Mr. Collcutt a w years ago, one by Mr. W. L. Lucas (already mentioned our pages) in the present Academy. Such a scheme is really tter worth public attention, at the present moment, than any her Thames bridge scheme.

Wimbledon Common Extension.

ON the 25th inst., at 5 p.m., the Lord Mayor will preside at the dedication, as a public open space under the control of the Conservators of Wimbledon Common, of portion of the lands in Kingston Vale which has been uired by the Wimbledon and Putney Commons Extension nd, with the object of extending the Common to Kingston ad opposite the Robin Hood Gate of Richmond Park. ndoners generally are concerned in maintaining the rural racter of one of the most beautiful pieces of open country hin easy access from London. The land between Kingston d and the present boundary of the Common, if not acquired n Open Space, is liable to be used for building; and with elt of houses and streets formed there, the rural and open ntry aspect of the Common would be seriously spoiled. 31 acres of this land have now been acquired, largely by local subscription; but the total area which should be saved from the builder, in order to preserve the land as an open space, is 172 acres, and it is stated that this can only be done if Londoners generally will assist with subscriptions, recognising that the preservation of such an open area near London is a matter of general public interest. Those who wish to be present at the dedication on the 25th, or to assist the cause in any other way, should apply to the Hon. Secretary of the Fund, Mr. Richardson Evans (The Keir, Wimbledon Common), to whose public-spirited efforts the success of the movement so far is mainly due.

Germany's First Garden City.

THE American Consul-General at Dresden, in a report to Washington, says that just on the outskirts of Saxony's famous capital there has sprung into existence during the last two years a garden city, the first of its kind in Germany. Hellerau is in a healthy location, two miles distant from and about 300 feet higher than Dresden. The wooded parts are preserved as much as possible. The 345 acres are divided into one section for cottages, the other for villas. The streets are already laid out, and all are to be provided with gas and water connections and with drains. Arrangements will also be made for a supply of electricity. Each cottage has a garden, a large cellar, separate scullery with a built-in boiler, pantry, water-closet on the ground-floor, easily accessible attic, gas for cooking, electric light and bells, water connection, and, if needed, accommodation for domestic animals. The smallest cottage consists of four rooms—kitchen and living room on the ground-floor and two bedrooms on the upper floor, large enough for a family with two or three children. In the villa quarter residences are to be had with steam heat, warm water to the bedrooms, and other conveniences. An artistic uniformity of building is guaranteed by a building commission, the sanction of which is required for all plans.

Builders and the Insurance Bill.

THE organised employing builders of the country have now formulated their objections to the National Insurance Bill, and these are ably summarised in a letter from Mr. A. G. White, which is printed in the present issue of the Journal. Many of them were anticipated in the editorial note which we published immediately the terms of the Bill were made known, and in comments that have appeared in subsequent issues. Stress is justly laid on the imprudence of further injuring a great industry that has already suffered severely from legislative interference, and is now being loaded with further burdens as if the Legislature were determined to ascertain experimentally and remorselessly the moment of absolute destruction. Why the accredited representatives of the employers were not called into consultation while the Bill was being framed passes comprehension, especially if it be true that the workmen were accorded this advantage. The case for the employers being stated so clearly in the communication to which attention has been drawn, a detailed survey of the same ground would be tedious and superfluous. The objection to Clause 2 (1), however, seems to need amplification, since it is not explained why "it is considered that apprentices should be exempted." But the nature of the objection can be inferred without much difficulty. Builders, especially those in a large way of business, are already reluctant to take apprentices, who, as a rule, are so unprofitable that they are commonly employed out of sheer sense of duty to the industry, in order that the supply of skilled workmen may be to some extent maintained. The decay of apprenticeship is notoriously a matter of national concern; and the inclusion of apprentices in this Bill will make employers still more unwilling to take them on. Already profitless, they are now to become still more expensive, and the employers therefore suggest that, in order to preserve the system from something like absolute extinction, it will be expedient to relieve the employers of the proposed liability for apprentices. This, however, while typical of the general oppressiveness, is only a small point in a Bill that teems with crude and ill-considered clauses. Surely, most of these, when their unfairness is made manifest, will be either drastically modified or wholly abandoned. What is chiefly required, however, is some equitable consolidation of the new insurance scheme with the provisions of the Workmen's Compensation Act, in order that administration may be simplified, cost economised, and an exasperating burden rendered less oppressive and less arbitrary in its incidence and adjustment. The organised employers have, in the main, such an excellent case, that they can afford to state it with studied moderation, and without laying undue stress on minor issues.

The Ironmongers' Almshouses.

NEGOTIATIONS are passing between the London County Council and the Ironmongers' Company as to the possession of certain relics connected with the historic almshouses and grounds in Kingsland Road, Shoreditch, which are about to be transferred from the Guild to the Council in trust for the public. The Company desires to retain possession of the statue of Sir Robert Geffery, the founder, and to transfer it to the proposed new almshouses, where it would occupy a position corresponding with the one it occupies in front of the old chapel. Those who are advising the County Council in this matter would prefer to see the statue remain in its present position, but as an alternative they suggest that the Company should supply the Council with a replica to take the place of the original. Further, the Company is desirous of removing to the new almshouses, when built, various monuments now in the chapel and adjacent graveyard. Chief of these is a tombstone in the open air, with the following inscription: "Beneath this stone are interred the remains of Sir Robert and Lady Geffrey, which, together with their monument in the Chapel of the Almshouses, were removed from St. Dionis Backchurch, Lime Street, City, when that church was taken down under an Act of Parliament, 8th July, 1878." If the Company wish to remove the bodies as well it will, of course, be necessary to apply for a faculty. Another notable outdoor tomb, says a writer in the "City Press," is that of Thomas Betton, a former Master of the Company, who, dying in 1724, bequeathed a large sum of money for the redemption by his Company of slaves in Turkey. Now that there are no longer any slaves in Turkey to redeem, the income from the trust is distributed by the Guild in charity. The tombstone originally devoted to the founder and his dame in the church of St. Dionis Backchurch, is preserved in the chapel of the almshouses. The idea of the Company is that all the monuments should be transferred to the new chapel, but the authorities at Spring Gardens contend that such a wholesale transference of characteristic relics would rob the buildings of much of their historic and antiquarian interest. The County Council has decided to take the houses in the rear of the garden, and the purchase of these will probably be completed by August 1st next. The complete transfer of the old buildings and grounds will be effected by October 25th.

The National Library at Aberystwith.

THE programme for the visit to Aberystwith of the King and Queen, with the Prince of Wales and Princess Mary, on July 15th, two days after the Investiture of the Prince at Carnarvon, included the laying of the foundation-stone of the National Library of Wales, and a visit to the University College of Wales, of which an account appears on p. 66. The question of providing a National Museum and a National Library for Wales has been discussed both in Parliament and in the Principality from time to time during the last 40 years, but it was not until 1907 that the Royal Charter founding the Library was granted. The Library was opened at the beginning of 1909 in a building known as the Old Assembly Rooms, in Aberystwith. The new buildings are to be erected on a hill close to the town. The site, which comprises five and a half acres, has been given by Lord Rendal. Six architects were invited to send in designs, and those of Mr. Sidney Kyffin Greenslade, of London, were selected by the Board of Assessors. The central block, containing the Administrative Offices, with the main entrance and flight of steps to it, is flanked on each side by the Library Hall and Exhibition Gallery blocks respectively. Beyond, on the north, the line is extended by the domed refreshment and heating building, with its portico ending the upper terrace, and to the south by the Librarian's residence and a small Memorial Hall, the length of the whole frontage extending to more than 500ft. The main block of buildings will form four sides of a square, with a frontage of just over 250ft. and a depth of the same dimensions. The smaller blocks are grouped around and extend beyond these dimensions. The central part of the front block will consist of Administrative Offices and the main entrance, leading to a public hall in the centre of the quadrangle. From this Central Hall access will be obtained to the Library Hall on the north-western side, the Exhibition Block on the south-eastern side, and the Department of MSS. which will be built diagonally across the quadrangle. The total cost of the whole scheme of buildings, terraces, and roads, including a sum of £30,000 for the provision of the book stacks when required, is estimated to be from £150,000 to £200,000.

The Liverpool School of Architecture.

THE School of Architecture at Liverpool University has just held its annual exhibition of drawings, excellent alike in measured work and design. The School, in this country at least, occupies a position apart from other educational centres, for the reason that it has what might be termed a definite declared architectural policy. Professor Reilly, under whose direction the present curriculum has been formulated, is of opinion that the haphazard methods which are characteristic of some architectural schools will never suffice to produce good work. He believes in centering interest on one governing style, and developing it consistently. Just as the designs and drawings done in the Ecole des Beaux Arts have one prevailing character, so the work done at the Liverpool School of Architecture bears the hall-mark of a modern adaptation of Greek forms. Duc, Labrouste, Cockerell, are names to conjure with in this respect, and the great buildings associated with them are refutation enough to any suggestion that the revivification and adaptation of Greek work must offer nothing but repetition and deadness. Professor Reilly therefore is on the right line in his scheme, and we may hope for a growing number of men from his school trained in the "grand manner," scholarly, and efficient.

In the examination in design the degree students have a month's subject, and the certificate students a week's subject, in both cases being allowed reference to books, but not to use them directly on their boards.

The design subjects during the past session included a town house, a landing stage and monument, a tramway shelter, and a treatment of the Royal Liver building at the Pierhead, Liverpool, while among the measured work were some cleverly executed drawings of Duc's noble façade to the Palais de Justice, Paris; Gabriel's Ecole Militaire, and Ginain's Musée Galliera, as well as a set of Blenheim, of much interest.

The School is fortunate in being housed in such a delightful building as the old Bluecoat School, and in having such a patron as Sir William H. Lever, who has been so generous in contributing funds. It was through his gift that a chair of Civics was founded at the University, which position is now held by Professor Adshead.

PARLIAMENT AND THE ST. PAUL'S BRIDGE

The Parliamentary Committee, after receiving the report of the three architects onsulted by the Corporation, and having heard the evidence of several witnesses, ecided to report to the House in favour of the Corporation scheme. This decision mplies the abandonment of the axial line to the southern entrance to St. Paul's.

The Bill promoted by the Corporation f London for the construction of St. 'aul's Bridge, which Bill was referred to e Committee under an instruction from e House, was considered by the Council n July 11th.

Mr. Lloyd, K.C., leading counsel for e Corporation, informed the Committee at, since the Bill was referred back, the orporation had consulted three eminent chitects with reference to the project. hese were Sir William Emerson and Mr. . E. Collcutt, past Presidents of the oyal Institute of British Architects, and r. J. J. Burnet, LL.D., F.R.I.B.A. hese three gentlemen had drawn up a re-ort dated July 7th.

Consulting Architects' Report.

The report, in which we have inserted oss-headings, is as follows:—

1. We have now completed our inquiries d consultations, and have the honour to ply to your letter inviting our opinion d advice in respect to the instruction of e House of Commons to the Committee the Corporation of London (Bridges) ll "not to agree to any scheme for the nstruction of the proposed new bridge, cluding the approaches thereto, until ey are satisfied that the scheme, both in spect of architectural design and con-nience of traffic, is the best adapted to public needs and best suited to the aracter of the site."

2. We construe the words "the scheme" the instruction as meaning the official eme of the Corporation or any alterna- e scheme, for a bridge to open out at or r St. Paul's Churchyard, which is the te" in question. We have considered scheme and also some other sugges- ns. The instruction opens up the three estions of—(a) The best adaptation to lic needs; (b) appropriateness to the racter of the site; and (c) architectural d ign.

ssential Conditions of a Satisfactory Scheme.

. We accept as essential conditions for a satisfactory scheme the following re- rements:—(1) That the projected dge must have its roadway at the level ve high-water mark shown upon the tion; (2) that the linking of the northern southern tramway system is an in- ral part of any scheme; (3) that the dway from the bridge must be carried a bridge over Queen Victoria Street.

. As to (a) adaptation to public needs, object of the Bill is to relieve the con- tion of traffic between south and north r London, Southwark, and Blackfriars dges, from a point in Southwark, near shalsea Road, direct to the main traffic ls to the north, via Aldersgate, and to r facilities for connecting the tram- systems on the south with those on north. After the most careful con- ration, both separately and in frequent sultation, of various suggested or pos- e routes, and study of the general plan of London roadways and contemplated nways in the neighbourhood of St. l's, we are of opinion that the line of e proposed by the Corporation is best oted to the public needs, and to ful- ent of the objects of the Bill.

The Question of Alignment.

5. As to (b) appropriateness to the character of the site, we would point out that in the Corporation scheme the situation of St. Paul's in the relation of its line of axis to the central line of the river is not a factor. The area of the Churchyard would be increased, and there would be no consequential obstacle to the consideration of future improvements of the Churchyard. Moreover, better views of the Cathedral would be secured on the only side on which this can be done, without disturbing the picturesque charm of present surroundings. There is the further point of great practical importance that, owing to the depth of the Cathedral foundations and the quality of the subsoil, it is only on the eastern side of St. Paul's that a subway for tramways can be constructed above the level of the foundations without menace to the structure. (It is understood, of course, that the subway is not to be deeper than shown on the section.)

Having carefully considered these points and all the surroundings of the site, we are of opinion that the alignment proposed by the Corporation is the one best suited to the character of the site.

Architectural Design.

6. In respect to (c) architectural design, we are in complete accord with the opinion of the Council of the R.I.B.A., that an architect or architects should have been appointed to collaborate with the engineers as to the general design of the bridge and its approaches when the scheme was initiated. In making this observation, the Council of the Institute were undoubtedly actuated by the desire—shared, of course, by the City authorities—that a fine monumental bridge of masonry should be erected. In skilled hands the bridge and its approaches can be made a magnificent addition to the river scenery about the City.

The Axial Line to St. Paul's.

7. Since the scheme was published side issues have been raised as to the "opening up" of St. Paul's. At first sight, and without detailed expert scrutiny, the idea that the opportunity might be taken to open up a vista terminating in the south transept of the Cathedral is attractive. The project shown by black lines on the plan has appealed to some architects and to a section of the public, and there has been a tendency to subordinate the main purpose of the new avenue of traffic between north and south to what would at the best be a subsidiary aim. In considering the project three points of great importance have to be borne in mind. They are: (1) The alignment of the bridge in relation to the river, since the proposed vista would only be obtainable by the building of a skew bridge; (2) the width of the northern approach to the Cathedral; and (3) the possibility of future river embankments being constructed below Blackfriars.

What Wren Intended.

8. We are of opinion that the suggested alignment is not good, and that as it would be almost impossible to make a satisfactory monumental design for such a skew bridge in masonry, it is probable that the bridge would have to be of steel—a contingency which the R.I.B.A. evidently wished to prevent.* There is strong presumptive evidence that Wren did not design the side elevation of the Cathedral to be looked at from any great distance. This is shown by the bolder treatment of the west front and of the Dome as compared with the comparatively superficial ornamentation of the other wall surfaces. And in this matter the great architect followed the best traditions of his profession. We know of no famous public building, either here or on the Continent, in respect to which it has been considered necessary to arrange great roads leading to the side of the structure. Wren evidently did not contemplate such approaches in the case of the Cathedral, but he did contemplate a wide road at the east end, and that he was capable of taking large views as to future requirements was shown by his well-known plan for the rebuilding of London. We may add that the Greeks—great artists—took special care that the Parthenon should not be approached by a road leading directly up to it. [* I am of opinion that it would be possible to construct a bridge over the river giving a vista of St. Paul's, which I should much prefer if found practicable. —T. E. Collcutt.]

9. Further, it is to be observed that views not less interesting than the suggested "vista" will be opened up by the roadway proposed by the Corporation, and that it would not prevent improvements subsequently being made, if necessity arose, in connexion with a general scheme for improvement of the Churchyard. We wish it to be clearly understood, however, that in our opinion there is a limit to such "improvement," and that to exceed it would be to place Wren's design at a positive disadvantage by bringing it under conditions it was not designed to meet. But such limit would not be exceeded by the improvements the proposed Corporation route would effect, and facilities would be offered for opening up picturesque views of St. Paul's which have hitherto been obscured.

The Question of Cost.

10. While it has been no part of our duty to examine with care the financial aspects of the conflicting schemes which have been the subject of public discussion, we feel it right to say that we have been impressed by the extent to which the "vista" scheme would involve altogether heavier expenditure, out of all proportion to the Corporation project.

Suggestion for Improving the Scheme.

11. With respect to the suggestions we are asked to make, we agree with the Council of the R.I.B.A. in their recommendation that architects should collaborate with the engineers in the designs for the bridge, the archways over Queen Victoria Street and Thames Street, and the approaches as well as the accesses from the lower and higher levels, and in the debouchment of the roads. If the general scheme is passed by Parliament we advise that such architect or architects be appointed.

12. We submit the following suggestions for improvement of the scheme as shown on the plan:—

(1) That where the bridge road debouches on to Cannon Street it should be opened out as much as possible within the line of deviation, and that the corner building to the south-east of Old Change be also acquired, thus opening that corner towards St. Paul's.

(2) That the building frontage along Old Change should be no nearer to the east end of the Cathedral than at present,

any future buildings following that line, and that the whole of the existing buildings between St. Paul's and Old Change should be removed.

(3) That at some time the property now obscuring the south end of the Post Office in St. Martin's-le-Grand be acquired, and the space opened up and arranged so that a fine suitable architectural feature might centre on the line of the new bridge. If this were done it would also be possible for Foster Lane to somewhat relieve the traffic by St. Martin's-le-Grand.

These alterations would give views of both the south-east and north-east sides of St. Paul's not hitherto obtainable. Further, ample space would be provided for the traffic at the road junctions, and right-angled crossings would be avoided.

Possible Damage to St. Paul's.

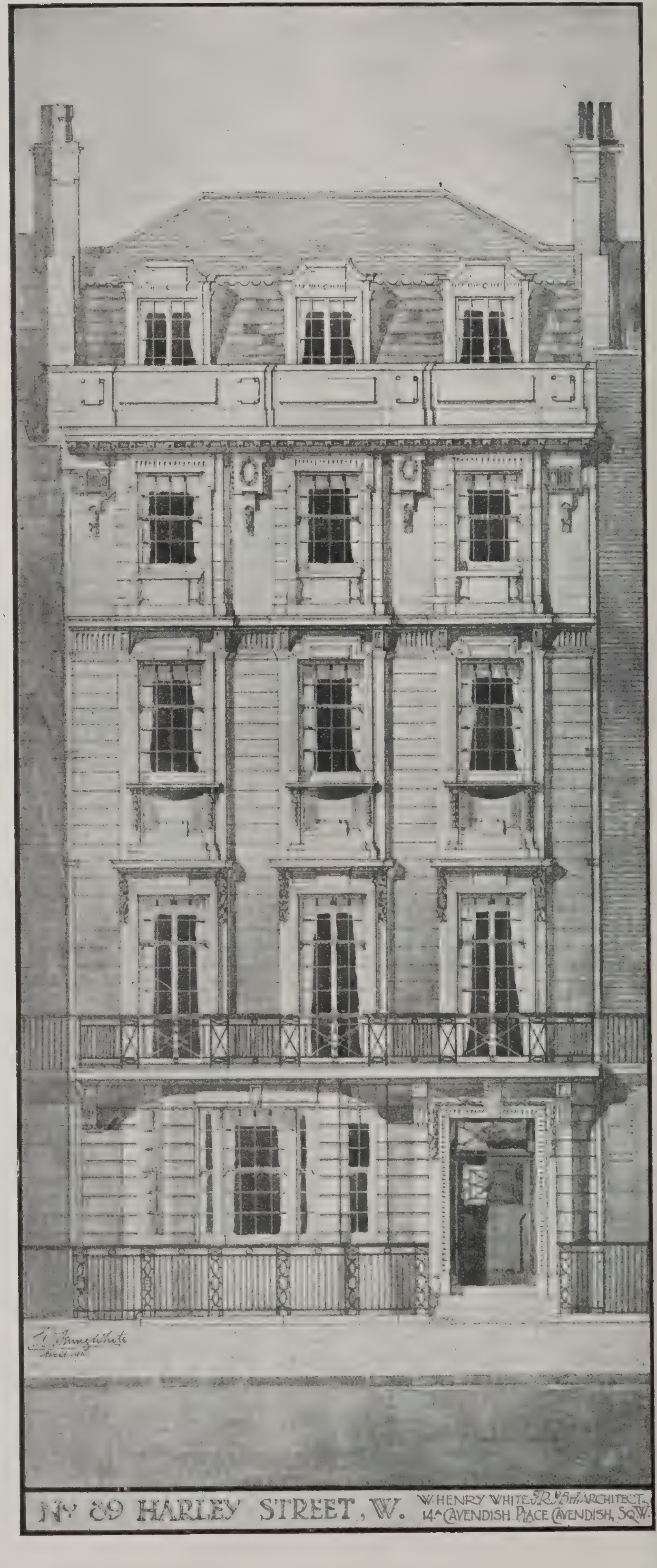
Mr. A. J. Barry, engineer to the Dean and Chapter of St. Paul's Cathedral, has addressed to Mr. Basil Mott, engineer for the bridge, a letter (which was placed before the committee), the gist of which was that he "should regard with the gravest concern any proposal that would involve the excavation of the subsoil nearer to the Cathedral than as shown on the plan, more practicularly if such disturbance of subsoil took place on the south side of the Cathedral." He concludes: "The main dome is, as perhaps you know, carried on four main corner piers, in addition to eight intermediate ones. The four piers on the north side have settled very little. In every case the piers carrying the south segment of the main dome have settled considerably more than any of the others. The south wall of the west transept has developed serious cracks, and there has been a general movement or draw of the whole structure towards the west and the south. This is evidenced by numerous cracks in the building, and by the fact that the south wall of the building is already out of the vertical. Generally I regard this part of the Cathedral as already being in a state of comparatively unstable equilibrium, and I should regard a far less serious disturbance of the subsoil than that which would be involved by the construction of so large a work as a tramway subway as close to the south wall of the building as I understand is proposed as entirely unpermissible in the interests of the security of so important a public structure as the Cathedral."

Professor Beresford Pite Gives Evidence.

Mr. Arthur Beresford Pite, F.R.I.B.A., objected, in the course of his evidence before the committee, that there was a want of definite architectural relationship between the great causeway and the great building. His second objection was rather to the aspect than to the plan. What they had to consider was the opening out of a new view of St. Paul's as an artistic possibility. As to a skew bridge, he did not feel that that there was an artistic objection to the relation of the piers beneath the bridge with the direction of the road upon the bridge.

The Chairman mentioned that, in reply to a communication from him, he had received a letter, dated July 4th, written at the request of the President of the Council of the Institute of British Architects, stating that "the announcement of the Corporation appointing three eminent architects to advise them on their proposals entirely meets the view of the Royal Institute. Now that these gentlemen are appointed the Institute has no further views to express in the matter."

Asked whether he agreed with this action, Mr. Pite said he did entirely.



Nº 89 HARLEY STREET, W.

W. HENRY WHITE F.R.I.B.A. ARCHITECT.
14 CAVENDISH PLACE CAVENDISH SQ. W.

Sir W. Emerson's Evidence.

Sir William Emerson was understood to say that it would, in his opinion, be almost impossible to make an architectural monument of a "skew" bridge. As to a vista on the lines advicated by Prof. Pite, he thought it would be going out of the way to make a strained effect. A great deal of the mystery and charm of St. Paul's would be destroyed by a long approach.

Mr. Forbes Lankester intimated that the Corporation were prepared immediately to accept the suggestion in the report, and to take away the old buildings between the Cathedral and Old Change. He added: "There being the necessity of constructing a bridge to accommodate the north and south traffic, and having regard to the architectural proximity of St. Paul's Cathedral, the scheme put forward by the Corporation is the best available one for the purpose."

To this Sir William assented.

Mr. Collcutt and Mr. Burnet also gave evidence. Mr. Collcutt, in the course of his evidence, said he did not like the idea of the new vista opened up by the Corporation proposal ending in a view of an oyster shop. He suggested that in place of the oyster shop a modern building, designed for the purpose of ending the vista, should be erected.

In reply to Mr. Essex, witness said his opinion was that, if it were possible to construct a bridge that should have a true alignment with the stream of the river, with an approach direct to St. Paul's, which should be 140 ft. to 160 ft. wide from Queen Victoria Street, he should consider that that would be the best scheme that could be put forward.

Mr. Basil Mott stated, in reply to the Chairman, that he should absolutely decline to have anything to do with a tramway subway running on the south side of the Cathedral. It would cause a movement which might be disastrous to St. Paul's.

The committee then adjourned.

On July 12th Mr. M. Fitzmaurice, C.E., Chief Engineer to the London County Council, replying to questions from Mr. H. Lloyd, K.C. (leading counsel for the Corporation), said he considered the width proposed for the new bridge and its approaches was adequate, and that the centre of the roadway was the best position for the tramway.

Mr. Somers Clarke's Evidence.

Mr. Somers Clarke, formerly architect to the Dean and Chapter of St. Paul's, said that when he was appointed in 1897 two points were impressed upon him by Mr. Penrose, whom he succeeded. One was to continue the work his predecessor had begun for securing the wall of the south transept; and the other was to set about the work then contemplated for the repair of the colonnade below the dome. The condition of the south transept was that there was a wall of about 110 ft. or 120 ft. long, 10 ft. thick, and, from the footings, [illegible] ft. high. That wall had "gone" east and west throughout its length and was in places broken through its thickness at the top and for some distance into the heart of the masonry. There was evidence of sinking having taken place from the very early history of the Cathedral, and old accounts showed payments made for "iron straps." It was obvious from the area of the footings that Wren himself was aware of the difficulties that might arise. The footings rested upon a layer of about 18 ft. of brick earth with substrata of gravel, not very solid stuff, and London clay, and a stream of water flowed through the gravel. There was evidence on the face of the building of settlements from time to time, and also on the south tower, the top of which was 18 in. out of the vertical to the south and west. The movement had been sufficient to imperil the stability of the portico and columns. He had noticed the effect of deep foundations being made for buildings in the neighbourhood, and that in itself was an element of danger to the Cathedral. The suggestion that a road should be brought out opposite the south transept and a subway made for a tramway he regarded as one that could not be carried out without great danger to the Cathedral. Assuming there was a public demand for a tramway there, he would not undertake to construct it.

Other Witnesses.

Mr. W. E. Riley, architect to the London County Council, attended at the request of the Committee, and gave his opinion in approval of the Corporation plan.

Mr. Pragnall, managing partner in the firm of Cook, Son and Co., strongly opposed the alternative proposal, which would involve taking part of the premises of the firm. The business had, he said, been established over 100 years, and was increasing; over 3,000 hands were directly employed. The buildings covered an area of 1½ acres, extending over eight streets, and on an average 250 vans were employed daily. Another site equally valuable could not be found. The premises were connected by 18 bridges and subways, there were 36 openings in the various streets for intake and output of textile fabric. If the premises were cut through for a "vista," no such site could be found elsewhere in London.

Decision of the Committee.

After the committee had deliberated in private for about half an hour, the Chairman, following the form of the Instruction of the Committee, said:—The Committee are of opinion that the scheme for the construction of the proposed new bridge, including the approaches thereto, is both in respect to architectural design and convenience of traffic the best adapted to public needs and best suited to the character of the site, and will report to the House accordingly.

JOINT COMMITTEE ON REINFORCED CONCRETE.

The Joint Committee on Reinforced Concrete have now completed their second report, and it will shortly be on sale at the Royal Institute of British Architects. In an introductory note the Committee state that since the issue of the first report in 1907 the use and knowledge of reinforced concrete for architectural and engineering constructions have steadily increased. It therefore appeared desirable that it should be reconsidered in the light of further experience, and this second report is the result of the Committee's labours. The section on materials has been modified in certain details. The section on methods of calculation has been recast in form, and the standard notation proposed by the Concrete Institute has been adopted. The subsection on columns has been revised, and the formulæ proposed have been recast, so as to include the cases in which the lateral or helical binding is a material factor in the strength. The suggestions which have been made from time to time by institutions and individuals have been of much value, and have been fully considered.

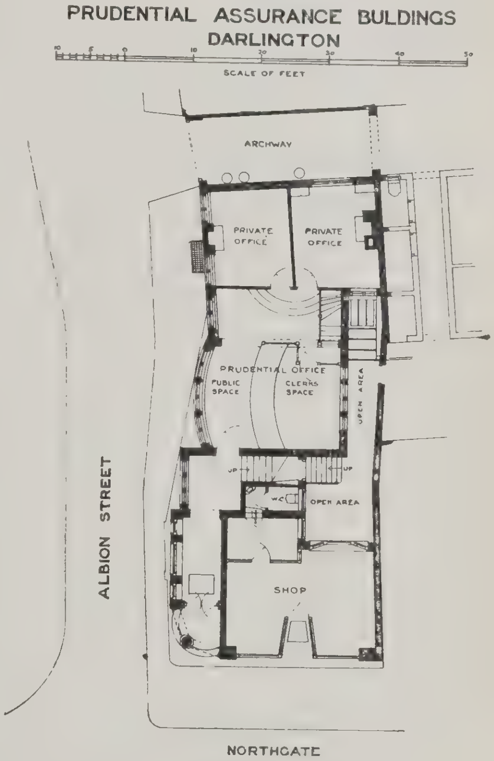
Professor Unwin, F.R.S., Captain J. Gibson Fleming, R.E., and Messrs. Wm. Dunn and E. Fiander Etchells contribute appendices. The size of page has been reduced for convenience of handling, and the work will be issued in stiff covers.

PRUDENTIAL ASSURANCE BUILDINGS, DARLINGTON.

The new buildings of the Prudential Assurance Company at Darlington have been designed to occupy a site of commanding position, but of very awkward shape. Not only is the ground narrow in proportion to its length, but the frontage in Albion Street is irregular. The side shown in the view on p. 56 is that facing Northgate, and is chiefly occupied, on the ground floor, by a shop.

The corbelling out over the granite columns at the entrance to the offices is due to the fact that, by arrangement with the Corporation, the angle of the site had to be rounded off. The sculptured figure is Prudentia.

The upper floors are designed for occupation by the Darlington Liberal Club and the Inland Revenue respectively. The Prudential Company's own offices occupy the whole of the ground floor except the portion let as a shop.



GROUND FLOOR PLAN

The exterior is faced with local stone.

The principal contractors are Messrs. J. and J. Airey, of Darlington, and Messrs R. T. Snaith and Son, of the same town. Local assistance in superintendance has been given by Messrs. Kitching and Lee (architects). The designer is Mr. Paul Waterhouse, M.A., F.R.I.B.A.

SANATORIA CONSTRUCTION.

Dr. R. Julyan George, in a letter to the "Times," says that the proposal in the National Insurance Bill to set aside one and a half millions for the building of sanatoria for the treatment of consumption is certainly an excellent one, especially if in the scheme it is laid down that there should be compulsory notification of all cases to the medical officer of health. But, he asks, would it not be well if, instead of erecting a few palatial edifices of bricks and mortar, the money allocated for building purposes be spent in putting up structures of a movable and temporary character while being at the same time properly constructed for the treatment in every respect? In this way many groups could be formed so as either to give one to a county, or to two or more combined, according to means and need. Such a provision would save long travelling journeys. The treatment, he adds, is still in a transition stage, and it is obviously unwise to bring large numbers of these people together. The groups should be formed on sites that are suitable, and the doctors in each district might have charge of the groups between them. Medical inspectors should be appointed to visit the groups and advise and report on them. The structures might, under the temporary building idea, be moved to other districts as required, and the old sites disinfected. In course of time, should this white scourge be wiped out, no huge piles of masonry would stand as monuments of what everyone wants to forget.

NEWS ITEMS.

New Chairman of the Royal Society of Arts.

The Council of the Royal Society of Arts have elected Lord Sanderson, G.C.B., chairman for the year 1911-12. Lord Sanderson has been a member of the society for over 30 years.

A London University School of Architecture.

At a meeting of the Senate of London University last week, it was resolved to approve the amalgamation of the Departments of Architecture at University and King's Colleges, subject to the provision of funds for the erection of a new building for a University School of Architecture on the site adjoining the north wing at University College.

Memorial to William Penn.

The memorial to William Penn which the Pennsylvania Society of New York has placed in the Church of All Hallows, Barking-by-the-Tower, is a large oblong bronze tablet with a decorative border. It was designed by Messrs. McKim, Mead, and White, New York, architects. The inscription records that Penn was baptised in this church on October 23rd, 1644. The memorial has been fixed to the south wall of the church.

New Wing of London Homœopathic Hospital.

The Duke of Argyll, in the absence of Princess Louise Duchess of Argyll, opened the new Sir Henry Tyler wing of the London Homœopathic Hospital, Great Ormond Street, on July 5th. The hospital was opened sixty years ago, and the new wing is seven storeys in height and provides about 65 additional beds, with new consultation-rooms, a new mortuary, and three additional laboratories for pathological, bacteriological, and vaccine therapeutic work.

Manchester Art Gallery.

The following letter has appeared in "The Manchester Guardian."

Sir,—Lest recent correspondence should make it appear that there is any general dissatisfaction with the result of the preliminary competition, we, the undersigned Manchester competitors, wish to say that we consider that the Corporation has conducted the competition on excellent lines; and that there is nothing in the assessor's report that would lead us to think that the selection of the ten final competitors is anything but a fair one.—Yours, etc., Harry S. Fairhurst, France and Laycock, J. Gibbons and Son, Henry Goldsmith and Son, Lindsay Grant, E. W. Leeson, P. D. Lodge, F. P. Oakley and G. Sanville, J. Henry Sellers, Woodhouse, Corbett, and Dean.—July 4th, 1911.

New Postal Department, Holloway.

The Postal Order Department of the London Post Office is now being removed to new premises in Manor Gardens, Upper Holloway, and the transfer is expected to be completed by the end of the month. The new building has cost £130,000, and occupies an area of 1½ acres of the site of 2¼ acres. It has basement, ground floor, and four storeys, and provides accommodation for 1,200 workers, nearly 1,100 of whom are women and girls. The special work of this department has to do with the examination, sorting, and classification of used postal and money orders, which are kept for three months after cancellation for purposes of reference. The growth of the business is indicated by the fact that the "store" of postal orders amounts to 100,000,000 separate orders. They represent in bulk a weight of about 30 tons. The building in Queen Victoria Street in which this work was carried on will be utilized at present for the purposes of the increased business of the telephone which comes with the acquisition of the National Telephone system.

University College (London) Department of Architecture.

An exhibition of drawings and designs made by the students in the Department of Architecture at University College will be held from Friday, July 21st, to Saturday, July 29th, inclusive. The exhibition will be opened on Friday, July 21st, at 5 p.m., by Mr. Leonard Stokes, F.R.I.B.A., President of the Royal Institute of British Architects. Persons desiring tickets of invitation for the opening ceremony should apply to the Secretary of University College. The exhibition will be open on week-days from 10 a.m. to 5 p.m. on the days following the opening to July 29th. Tickets of admission are not required except for the opening ceremony.

SIR THOMAS MANLY DEANE, R.H.A.

Erratum.

It has been courteously pointed out to us by Mr. E. Beresford Chancellor that in a review of "The Castles and Walled Towns of England" which appears in our issue of July 5th he is "credited with the authorship of this excellent work," which, as duly recorded in the footnote to the review, should have been solely attributed to Mr. Alfred Harvey. The error apparently arose from our reviewer having in hand at the same time Mr. E. Beresford Chancellor's fascinating "Lives of the British Sculptors," a notice of which appears in the July issue of "The Architectural Review."

OUR PLATE.

With reference to the reredos and stalls in Newcastle Cathedral, it may be mentioned that the architect, the late Robert J. Johnson, was a pupil of Sir Gilbert Scott, who thought very highly of his abilities and of his work. Mr. G. E. Street had a similar opinion of him. When plans for a Middlesbrough church were submitted to Street for criticism, he asked "Who's your architect?" The reply was "Johnson, of Newcastle." Street replied "Anything Johnson has done I will pass without examination," and on looking over the designs he exclaimed, indicating various features, "Capital! capital—worthy of Johnson." With all his work he took the most scrupulous pains.

The screen in St. Matthew's Church, Cockington, does not call for any extended description. It is a good example of modern Gothic by two architects, Messrs. Nicholson and Corlette, whose work is always stamped with individuality and scholarship.

SIR THOMAS MANLY DEANE, B.A., R.H.A.

Sir Thomas Manly Deane, whose portrait is here given, by courtesy of the "Freeman's Journal," and who was knighted by the King at the opening of the Royal College of Science, Dublin, of which, jointly with Sir Aston Webb, he is architect, is the son and grandson of architects who received the honour of knighthood. Sir Thomas graduated at Trinity College, Dublin, in 1872, and, besides studying architecture under his father, was articled to the late William Burges, A.R.A., and worked in the studios of Frederick Weekes and the Slade Schools. In 187 he won the Travelling Studentship of the Royal Academy, entering into partnership with his father in 1878. The firm's many important works include the Nationa Museum and Library and other public buildings in Dublin; the Physiologica Laboratory and Anthropological Museum at Oxford; and several large hospitals and asylums, as well as much ecclesiastical collegiate, and domestic work.

CORRESPONDENCE.

The Island of Comacina.

o the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—In your issue of July 5th you call ttention to the Island of Comacina as eing in the market.

May I be permitted a few words on he subject to endorse what you say, in ope that the Island may, at all events it is to be sold, fall into the hands of n appreciative purchaser, who would alue it for what it is and what it posesses.

Considering the importance of the sland in history, it is surprising how ew of the thousands who pass it year by ear know even of its existence; and one entures to think that if only the story f the Island were better known some— iany even—would be forthcoming to save from an unworthy fate.

In my little book on the Comacines, ublished last year, I gave an outline f its history, collecting all that could be btained from English and also a good eal from Italian sources. But I am coninced there yet remains in the archives f Como and beneath the surface of the sland a great deal yet to be unearthed, hich would be of the greatest interest the antiquary and the historian.

I will not take up your space by any engthy remarks on the story of Comaina; but when I remind your readers that e Island was at one time the storehouse f untold treasure: that it was the last ronghold of the expiring Roman Emire west of Ravenna: that it became the ome and centre of the most remarkable uild of builders Europe has seen, deending from the old Roman Collegia of rtificers; that its fall became a necesty because it was a constant menace to omo; and that it had on its tiny area ess than half a mile one way and less ian a quarter of a mile the other way) o fewer than nine churches, I think irely some one should be found or some ociety should be sufficiently interested take the matter up and save the Island.

Of course, the estate agent puts every de of the possibilities it possesses—that his business; but I do earnestly hope it ay not be fated to be sold to a casino mpany who would have no care for its easures or associations.

Once lost, it will be practically lost r all time: and in the hope of averting ch a catastrophe I am sending you this tter of appeal to all who could save the land.

W. RAVENSCROFT, F.S.A., F.R.I.B.A.

uilders and the National Insurance Bill.

SIR,—This Bill was considered by the lministrative Committee of the National ederation of Building Trades Employers Great Britain and Ireland at its meetg on June 20th, and will be further conlered at its half-yearly meeting on July th.

The committee had before it numerous solutions of protest from all parts of the untry, of which the following is typical: 'he Council of the London Master uilders' Association regards with grave ncern the many unfair liabilities prosed to be imposed upon employers by National Insurance Bill, and it ongly protests against the passing of Bill."

The above resolution and the following jections have been forwarded to the ancellor of the Exchequer:—

GENERAL OBJECTIONS.

I.—Much disappointment is expressed that in preparing the Bill the Government have not proposed some amelioration of the Workmen's Compensation Act, which becomes every year more burdensome, and which is now costing from four to six times as much as it did at first, with a further large increase in prospect, instead of which such references as are made to that Act are considered to be in the direction of increasing the cost of administering it (see references hereinafter).

II.—It is considered that the selection of a limited number of trades to be experimented upon in connection with Unemployment Insurance is unfair, and that the Building Trade, which has now suffered a long period of depression, is ill-fitted to bear the further set-back which will follow the increased cost of production involved in this further burden. That Part II. of the Bill is admittedly incomplete and amounts to legislation by reference of a most objectionable type. That therefore this part of the Bill ought to be held over for the present.

III.—That it is a matter of deep regret that the views of Associations of employers were not ascertained during the preparation of the measure, seeing they are so deeply interested. That other classes concerned have enjoyed an advantage in this respect which has been denied to us, and that it is unfair therefore to push the measure through as quickly as appears to be intended.

IV.—It is objected that employers, as such, receive no benefits from the Bill except such as are shared by the professional and leisured classes, that therefore it is unfair to require contributions directly from employers. It is a national scheme, and the whole nation should bear the cost. To put this charge upon employers is really raising wages by legislation. It is suggested that the employer will pass on these charges to the consumer, but if they do the cost of their products will be enhanced, and higher prices tend to curtail demand, which in turn tends to diminish production and so creates unemployment.

SPECIFIC OBJECTIONS.

PART I.

Clause 2 (1).—It is considered that Apprentices should be exempted.

Clause 11 (1c).—It is considered will affect the working of the Workmen's Compensation Act by practically making these Insurance Bill Committees into Arbitration Committees under that Act.

Those Committees, mostly composed of Benefit Society representatives interested in economically administering the Insurance Fund, will probably take the most liberal view of the amount of Compensation which they can approve, the cost of such liberal interpretation will fall upon the employer. At present all agreements under this Act have to be approved by the Registrar. We think this ought to suffice and that Clause 11 will prove cumbersome and add to the expense. The Insurance Committee should be made fully aware of all such agreements, but have no control over their making.

(1e).—This clause it is thought may cause workmen to shift the burden of taking action against the employer on to the Committee. In effect this would place the Committee in the invidious position of judge under sub-section (c) of this clause and party under sub-section (e). The power to withhold benefit may be some protection, but if exercised appears to stultify the purpose of the Bill.

13.—Objection is made to funds contributed by employers being administered by Workmen's Societies on which Employers are not represented. The experience of the Compensation Act shows there is a marked tendency to prolong the period of an illness because of the compensation received; that men knock off work more readily for small injuries because they expect compensation. It is believed similar results will follow the application of this Bill. Employers are therefore deeply interested in the administration of the funds to which they contribute. It is believed that an investigation would show that the cost of sick benefit paid by the Trades Unions and Friendly Societies in connection with the Compensation Act has risen *pari passu* with the increased cost of Workmen's Compensation which makes us doubt whether the Unions and Friendly Societies themselves are able to properly control the tendency referred to. In this connection it is suggested that a substantial relief would be afforded to employers if accident cases were compensated out of the Sickness Insurance Fund for, say, 8 or 10 weeks, after which time the whole burden of the Workmen's Compensation would come upon the Employer. It is most desirable to enlist the best help of the Trade Societies in keeping down the cost of the earlier stages of Workmen's Compensation payments. In this respect we consider the German system better than ours. Another suggestion is that medical attendance should be guaranteed in accident cases as well as in sickness with a view to discouraging malingering, since medical men acting in a fiduciary position might be expected to impartially expose unscrupulous workmen making undue demands for compensation benefits and in any case do their best to get men back to work soon.

Clauses 41 and 43 (2).—The opinion has been expressed that the employers should be adequately represented on the Insurance Commission and on all Health Committees. It is further felt that persons having personal knowledge and practical experience of the trades concerned should be entrusted with the administration of the Act, as matters must arise for adjudication when such knowledge and experience would be of great value.

Clause 46.—Is objected to in toto by some of our branches. Also that employers should not be held responsible for excess sickness which they cannot foresee or provide against. Such sickness ought, we think, to be the affair of the Sanitary Authority of the district to which the employers pay rates on their property and fixed plant.

(2 a b c).—No provision is made for penalising the case where the excess sickness is due to neglect by the employed of precautions imposed on him by law or regulations, or for insanitary habits or acts. If retained, it is urged that it should leave the judgment as to cause of sickness to the Public Health Authority.

Clause 51.—A tenant in receipt of sick benefit may occupy a house for 28 weeks without paying any rent during that time; by Section 2 this period may be exceeded and even extend to 12 months. During even the shorter period the landlord's security for rent would frequently disappear in favour of more pressing calls. It promises to open up a new field for pretending or cultivating illness in order to avoid the payment of rent. It is considered this clause should be deleted, since it will stop the investment of money in the class of property to which it applies. It is urged that if it is deemed advisable to relieve the tenant of rent it should be done at the cost of the Insurance Fund, not at that of the property owner, and that the promise made by the Chancellor does not go far enough. The owner should be repaid from the Insurance Fund any shortage of rent due to the operation of the clause.

PART II.

Clause 63.—It is suggested that the disqualification herein should extend to 12 weeks; also breaking an indenture of apprenticeship should be made a specific act of misconduct; also that insurance cards should bear the name of the employer, so that an enquiry may be made before setting on the man.

Clause 66 (2).—It is desired that panels of persons chosen to represent employers and workmen on the Courts of Referees should be chosen by the Trade Associations from their members, and that the appointments of the Board of Trade be made from persons so selected and nominated.

Clause 68.—It is suggested that the invested insurance funds will be liable to depreciation and that this should be guaranteed against, and more especially in view of Clause 71.

Clause 70.—Is considered unduly restricted. A workman compounded for, who leaves his employ and subsequently returns thereto, is not covered for the second period of employment, though under Section 73 a workman obtained from a Labour Exchange is covered by one payment for any number of periods of employment, and this extends even to the employment of different men. The employer it is claimed should enjoy the same advantages from compounding, whether the man compounded for is obtained from a Labour Exchange or not. Workmen not infrequently take a holiday in slack seasons, and this clause, as it stands, would act unfairly to both workman and employer.

Clause 71.—Entitles a workman who has paid 500 contributions to apply for the whole amount (less benefits received) to be returned to him on reaching age 60, together with 2½ per cent. compound interest. The employers think that they should not be called upon to pay towards a fund to provide this 2½ per cent. compound interest investment, which leaves the contributions of the employers and those dying under 60 alone to support all the expenses and charges of the fund.

Clause 72.—In cases of short time it is suggested provision should be inserted exempting employers who act under this clause from being held to have committed a breach of any trade rules relating to the recognised hours of labour of his district.

Clause 74.—Is objected to on the ground that it will militate against youths serving apprenticeships by discouraging parents in this direction. It is thought there is grave objection to a man being taught a skilled trade without serving his apprenticeship. As an example, suppose a lad breaks his apprenticeship agreement at, say, 18, and obtains higher wages until 21. The amount so obtained at, say, an average difference of 6s. per week above what he would have received as an apprentice would amount to £50 or £60. He pockets this and may subsequently be completed in his knowledge of his trade at the expense of the fund. It is suggested that persons taught under this clause should be required to repay gradually to the fund the whole cost of such teaching.

Clause 79.—If this section is acted upon precautions should, we think, be taken to prevent the Trades Unions making use of the payments to secure repayment to themselves of subscriptions, fines, and levies.

THIRD SCHEDULE.

It is considered a hardship for an employer, who may happen to employ a man for one day, and that the first day's employment in that week, to have to pay the whole of that man's contributions for that week. It is thought this will work very unfairly. Employers will be tempted to ask men who apply whether they have been already employed that week, and if so, give a preference to those for whom they will not have to pay.

(7).—It is suggested that any notice by employers to lower wages after the passing of this Bill might be interpreted as an attempt to get behind paragraph 7, and this should be guarded against.

It is well known that the building trade is suffering from the effects of an unusually prolonged spell of bad trade; the burden of the cost of Workmen's Compensation insurance is continually increasing, and in addition to this measure for providing insurance against sickness and invalidity it is proposed to impose upon it the further burden of the Unemployment Insurance, a burden imposed only on this trade and the engineering trade.

The building trade includes an exceptionally large number of small employers, upon whom it is believed this measure will press very hardly. It is much to be desired that, so far as the building trade is concerned, this legislation should not take effect immediately, but that some reform of the excessive and unreasonable cost of Workmen's Compensation insurance should be first brought about.

A. G. WHITE,
Secretary, National Federation of Building Trades Employers of Great Britain and Ireland.

The Quantity Surveyors' Association.

We are officially informed that Mr. C. W. Ball, M.S.A. (Southsea), has been elected president of this association for the ensuing year, and Messrs. T. J. Carless and Henry Riley vice-presidents.

THE UNIVERSITY COLLEGE OF NORTH WALES.

The University College of North Wales—which was opened by the King on Friday last—is a constituent college of the University of Wales, and is incorporated by Royal Charter.

Some New Departments.

In 1885 physical and chemical laboratories were opened; in 1888 the Agricultural Department was established; in 1890 an Electrical Engineering Department was established; and this was followed by the establishment of the Day Training Department for Elementary School Teachers in 1894, and of a Secondary Training Department (post-graduate) in 1897. By 1900 it had become evinent that the college had wholly outgrown the possibilities of temporary accommodation, and that the question of the provision of permanent buildings must be faced. The original building was not merely inadequate in size, but wholly unsuitable in structure and arrangement. A library, a large central hall, proper lecture theatres, common rooms and museums, together with increased laboratory accommodation, were urgently needed. In 1902 the Corporation of Bangor presented as a free gift a site of more than ten acres in the middle of the town at a cost of about £15,000. To this the college council subsequently added, by purchase, an adjoining area of four acres. It was calculated that the cost of completing the college buildings on the new site for double the existing number of students would be about £180,000. A subscription list was opened and a systematic canvass of the whole of North Wales was set on foot. With the aid of a Treasury grant of £20,000 the subscriptions had by 1905 reached a figure which justified the Council in proceeding with the building. Competitive designs were invited for the first and larger section of the permanent buildings required, comprising arts departments, administrative section, great hall, library, and museum. The adjudicator, Sir Aston Webb, R.A., selected the design of Mr. H. T. Hare, the designer of Westminster College, Cambridge. On July 9th, 1907, the first stone was laid by King Edward VII., and building was begun some months later. In 1909 the Drapers' Company made themselves responsible for the erection of the wing containing the library and museum, at a cost of £15,046, and in 1910 one of the Vice-Presidents of the College, Mr. (now Sir) John Prichard-Jones undertook to provide the great hall, which involved an expenditure of £17,000. The cost of the site and buildings now completed is £127,500, of which nearly the whole has been secured. New science laboratories still need to be erected, at an estimated cost of about £80,000.

The new buildings of the University College occupy a fine site in Upper Bangor. The ground falls steeply down to the lower city, and the buildings occupy the upper levels. They are thus conspicuous objects from all quarters, and the great tower is visible far out at sea. The complete scheme of the college buildings comprises arts, chemistry, physics, agriculture, botany, and zoology departments, a great hall, a library, and a museum. The portion at present erected includes the arts department, the library, the administrative offices, and the great hall.

The new buildings form portions of two quadrangles. The smaller quadrangle is completed, while of the other less than one half is at present erected. Owing to the great variation in the levels of the site the buildings show considerable irregularity, some portions being four storeys in height and others only two, although the roofs throughout are practically of equal height. This has resulted in a picturesque and varied effect, which is eminently suitable to the position and surroundings. The arts block occupies about half of the frontage facing south-east, and contains four storeys. The ground floor consists of common and social rooms, opening on to a path walk or terace. The first and second floors are devoted to class-rooms, capable of accommodating over 1,000 students at one time. The third floor contains private rooms for professors and their assistants.

The administrative wing forms a part of one side of the great quadrangle, and adjoins the main entrance and great hall. This contains the College office, registrar's rooms, council-room, and Principal's rooms.

The great hall is placed on the highest portion of the site, and will therefore be the dominating feature of the scheme. The internal dimensions are 50 ft. wide by 150 ft. long, and the hall affords accommodation for about 1,500 persons. The interior of this room will be finished with wainscot panelling to the lower portion of the walls, and the upper part will be faced with stone. It will be lighted by large mullioned windows on each side, which are intended ultimately to be filled with stained glass. Provision will be made for an orchestra and an organ. The library and museum occupy the south-east side of the great quadrangle, each being 32 ft. wide by 134 ft. long, and lighted from both sides. The library will have an open timbered roof in wainscot, and will afford accommodation, with its stock rooms, for about 100,000 volumes and 100 readers.

The buildings throughout are faced with stone from the Cefn quarries, near Ruabon. Special precautions have been taken in the construction of the exterior walls to enable them to resist the severe gales to which the building is exposed. All the floors and staircases are constructed of fire-resisting materials, and the woodwork throughout is of Austrian wainscot. The general style of the design is that of the Early English Renaissance, a style associated historically with so many of our educational buildings; the detail is of a simple and appropriate character, the only enrichments being in the form of armorial bearings in carved stone, and in the glazing of the windows. These commemorate donors and benefactors in most cases, and in others are of local or historical significance. A large number of special donations have been made to the buildings, amongst them being a handsome pair of wrought-iron entrance gates and several fine stained-glass windows. There are, however, still many vacant places where further gifts of the same kind may be suitably employed.

Dissolution of Partnership.

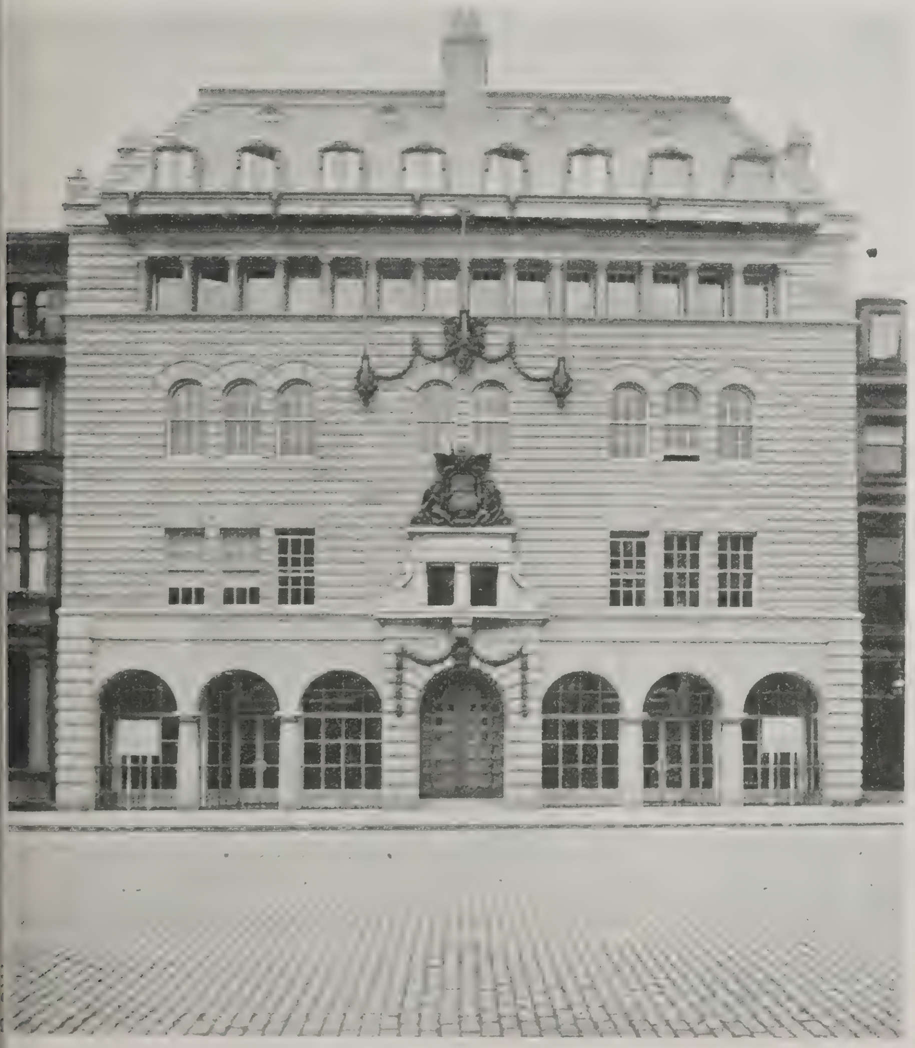
Mr. E. Thos. Johns, architect (who is also Surveyor to the Ipswich Education Committee), 8, Lower Brook Street, Ipswich, announces that the partnership hitherto subsisting between himself and Mr. William Eade has been dissolved, owing to the retirement of Mr. Eade, Mr. Johns will continue practice as before.

UNITED FREE CHURCH OFFICES, EDINBURGH.

The new offices of the United Free hurch of Scotland are in George Street, dinburgh. On the street floor is an cade of seven bays, and the central bay the main entrance, the three on each de giving access to the recessed shop onts. The architects, Messrs. Sydney itchell and Wilson, Edinburgh, have lopted the Florentine style in the treatent of the building as seen from George reet. Grey Dalbeattie granite is used the first floor, and above that is dressed ndstone rusticated. A feature of the ternal planning is the large amount of at wall space to fenestration, but nevereless the rooms are admirably lighted. he height from the street to the wall ad is 55 ft. 7 in., and to the ridge of e roof is 18 ft. more. Backwards to the ne in the north the building has a depth 142 ft., and this is arranged **H** style—at is, a front block, connecting corrior, and back block, thereby giving large urts from which the corridors and many oms receive abundance of light.

The outer hall, opening from the main trance, has granite walls, and the inner ll has domed ceiling and walls lined ith Doulton Carrara creamy ware, and yond, with walls of Doulton ware, is a stibule with black marble columns. This Doulton ware has been freely used throughout the building, and is affixed in tiles 18 in. by 12 in. Special attention has been paid by the architects to the planning of the large hall on the ground floor at the rear—an important adjunct of the offices. This hall is 72ft. 2 in. in length, 39ft. 8 in. in breadth, and 26 ft. in height, the roof being carried up to the level of the second floor of the back portion of the building. Walls and roof are done in white plaster and elaborately panelled and decorated. The ceiling is heavily panelled. The north and south walls are divided by light and elegant fluted pilasters into seven bays, with circular arched heads, and the east and west walls in the same manner into three bays.

On the first floor to the front through folding doors from the south end of the corridor are two large public offices, also splendidly lighted by windows opening on the west and east courts, while the heads of departments have rooms overlooking George Street. Plenty of accommodation on the various floors is provided for offices and committee-rooms. On the attic flat are luncheon and smoking-rooms, with kitchens to the back and caretaker's house to the front. There are also a museum and storage rooms. All the floors are fireproof, and on the public corridors and stairs Terrazo is laid. The front shops are 50 ft. in length and over 30 ft. in width, and have ample cellarage.



BUILDING FOR THE UNITED FREE CHURCH OF SCOTLAND, GEORGE STREET, EDINBURGH. SYDNEY MITCHELL AND WILSON, ARCHITECTS.

BRAZIL'S WONDERFUL CITY.

The remarkable growth of Brazil's "wonderful city," Sao Paulo, is described in a report on the trade of the State of Sao Paulo in 1910 by his Majesty's Consul, Mr. O'Sullivan-Beare. In 1887, he says, Sao Paulo was a quiet, rather sleepy town of the usual up-country Brazilian type, with a population of some 47,000 inhabitants, notable only from the fact that a large number of religious orders had established themselves therein. When the great tide of immigration into the State of Sao Paulo commenced in the year 1887, a considerable proportion of the newcomers established themselves in the capital, with the result that the population increased by leaps and bounds during the ensuing years, rising last year to 350,000.

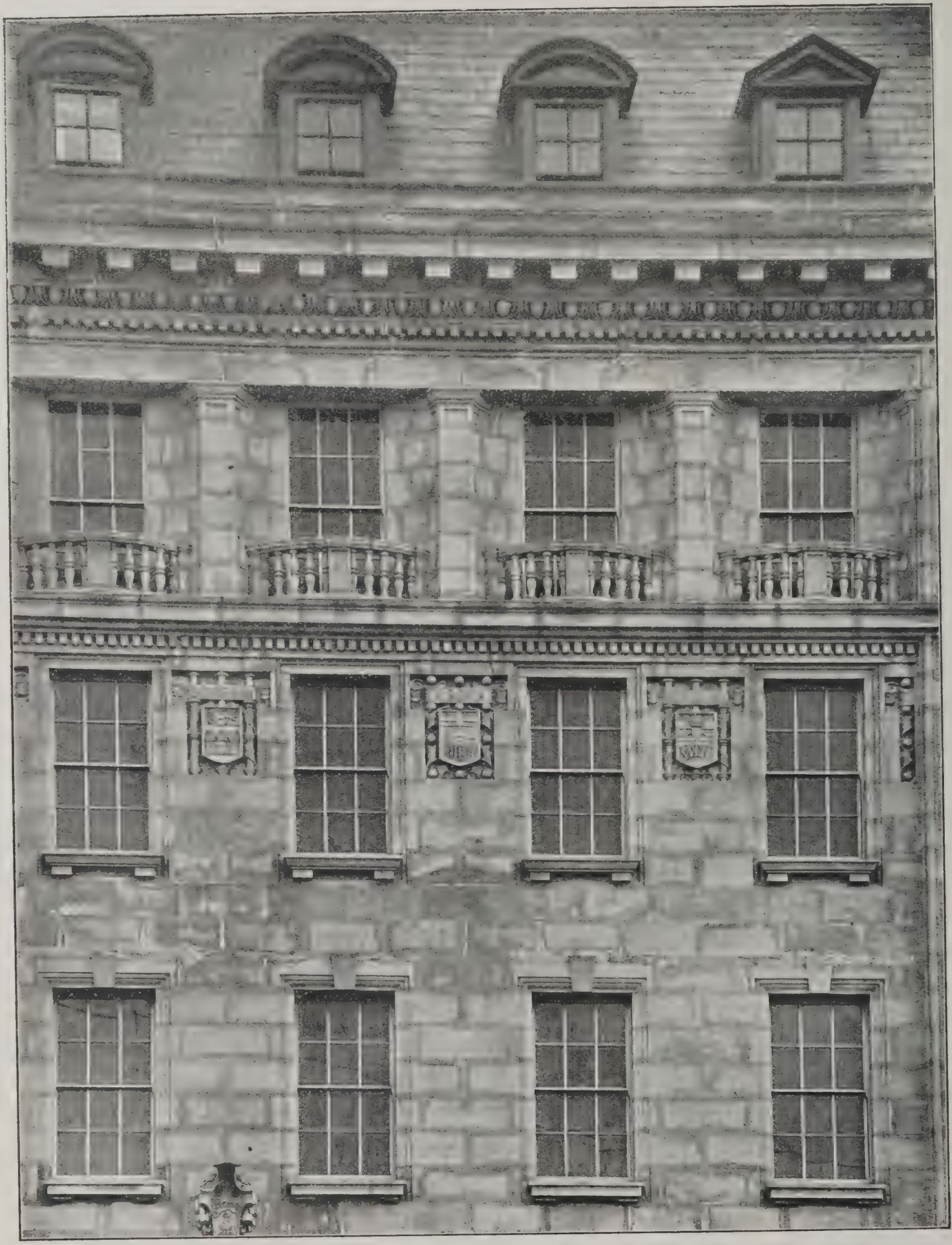
At the present time Sao Paulo ranks as the second city in Brazil. The appearance of the new city of Sao Paulo, which has sprung into existence within the past 20 years, is a matter of surprise to visitors. Sao Paulo now resembles one of the great cities of Europe. The principal business streets are lined with shops which, in outward appearance and in the variety and richness of their contents, vie with those of Paris or of London. The city has been planned with much taste; the various streets and avenues are wide and straight, all well paved and planted with shady trees. Throughout the city exist a number of public gardens, admirably laid out and beautiful with their wealth of tropical verdure. The private residences are remarkable, on the whole, for the originality and beauty of their architecture, while many are of great size and magnificence. The bustle and activity and the ever-increasing traffic which prevail throughout the city during business hours make it difficult for newcomers to realise that they are in a Brazilian town. The municipality spend money liberally, with a view to improving and beautifying the city.

There is just being completed a municipal theatre which vies in magnificence with that of Paris, upon which it is modelled. It is estimated that the total cost of this opera house will exceed £1,500,000. Within the past few months the municipality have voted a sum of £400,000 for the purpose of constructing a new avenue of communication. A project is under discussion for the carrying out of an immense project, estimated to cost some £3,000,000, namely, the construction of a series of main boulevards to traverse the city in different directions. The progress of the city at the present time may be gauged from the great activity which prevails in the building trades. On all sides are to be seen houses in course of construction, which houses are immediately occupied as soon as finished. New houses are being built at the rate of 3,000 per annum.

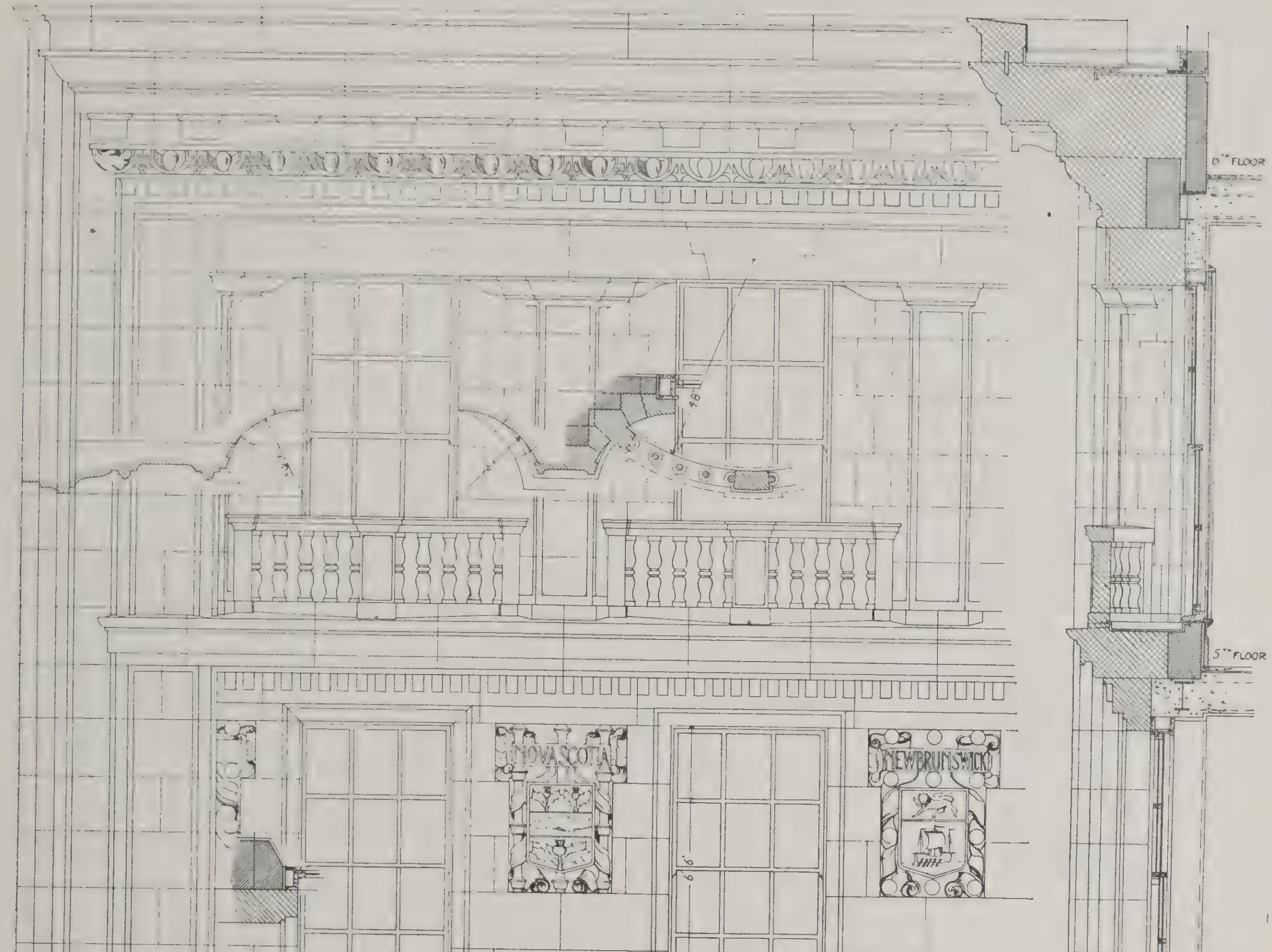
DETAILS—OLD & NEW.—XVII.

Grand Trunk Railway Offices, Cockspur Street, London.

This notable addition to London street architecture is faced with Portland stone. The company occupy the ground floor, and the upper floors are let as offices; the rooms in the roof are dwelling-rooms. The design of the façade is very successful, especially the upper part with the recessed windows and segmental balconies. The arms on the shields below are those of Provinces of the Dominion.



DETAIL OF UPPER PART OF NEW BUILDING FOR THE GRAND TRUNK RAILWAY OF CANADA, COCKSPUR STREET, LONDON. SIR ASTON WEBB, C.B., R.A., ARCHITECT.



DETAIL OF UPPER PART OF NEW BUILDING FOR THE GRAND TRUNK RAILWAY OF CANADA, COCKSPUR STREET, LONDON.
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THE CHAPEL OF THE ORDER OF THE THISTLE, EDINBURGH.

The new Chapel of the Order of the Thistle, which has just been opened by the King, forms an adjunct of the ancient St. Giles Cathedral, Edinburgh.

Though the Order of the Thistle has been in continuous existence for 208 years, the knights have never possessed a chapel of their own. This circumstance has always placed the Order at a serious disadvantage, and several years ago Scottish patriotism decreed that the time had come when something should be done towards placing the Knights of the Thistle on an equal footing in this matter with their more fortunate brethren of the Garter. The movement owed its origin to the munificence of the late Earl of Leven and Melville, who left £40,000 for the restoration of the ancient Chapel Royal of Holyrood. But a commission appointed to investigate the practicability of the scheme reported strongly against any attempt to restore Holyrood Chapel, and this view was fortified by the opinion of Professor Lethaby and others. The project having fallen through, the sum bequeathed by Lord Leven and Melville reverted to the members of his family, but his son and heir, the present earl, generously placed his share, amounting to between £20,000 and £25,000, at the disposal of the late King. His Majesty then expressed a wish that the money should be spent in rearing a chapel for the Order either within the precincts of St. Giles Cathedral or adjoining it. Accordingly, the matter was put before the ecclesiastical authorities in Edinburgh, who cordially welcomed his Majesty's proposal, and lost no time in giving effect to it. In April, 1909, Mr. R. S. Lorimer, A.R.S.A., was appointed architect, and early in the autumn building operations were in full swing.

The problem which confronted Mr. Lorimer was to design a building which would harmonise with the general features of the ancient fabric alongside of which it was to be placed. No adequate scheme could have been carried out within the existing walls of St. Giles without interfering with the congregational uses of the church; and the choice of the south-east corner of the cathedral as the site for the chapel was obligatory from the general plan of the cathedral, and more especially with respect to its lighting. As the width and length of the chapel were necessarily limited, a dignified and stately effect was aimed at by giving the chapel great height in proportion to its other dimensions, and great height from the floor of the window-sills is demanded for the treatment of the canopied stalls. The building is 33ft. long, 17ft. wide, and 35ft. high to the apex of the vaulting. Access to it from the cathedral is obtained through an ante-chapel, whose low-vaulted roof contrasts strikingly with the lofty proportions of the Chapel of the Thistle.

The treatment of the interior is somewhat severe, but it accords well with the extreme simplicity of the existing fabric. The west end of the chapel is square, while the east end, where the Investiture chair, with its handsome canopy, is situated, is apsidal. The King's stall, which is a beautiful piece of work, has been placed in the west end of the chapel, together with the stalls of the two special knights—the Prince of Wales and the Duke of Connaught—which are flanked in turn by those of the senior knights, the Dukes of Atholl and Argyll. Ranged round the side walls are the stalls of the sixteen knights. These are of oak, and are surmounted by elaborately carved canopies, upon which rest the helmets and crests of the knights. The stalls are fully 18ft. high from the floor to the apex of the canopy work, and altogether impart an air of dignity to the interior.

Special attention has been paid to the stall-plates, which have been executed in brass and champlevé enamel by Mrs. Traquair. The windows of the chapel have been fitted with heraldic glass, with the exception of the one at the east-end, which is of a more ornate character. In the lower light is the old Royal Arms of Scotland, above which is a figure of St. Andrew, patron of the Order of the Thistle, and, higher still, two angels holding the cross. Below the window is inscribed the motto of the Order—"Nemo me impune lacessit." The chair of the Dean and the lectern are situated a little in front of the Investiture chair, at the east end and respectively to north and south. The roof of the chapel is elaborately vaulted in stone, the vaulting having moulded ribs, with richly carved bosses at the intersections, while the floor is laid with green Ailsa Craig granite and Iona marble.

Externally, the principal feature is the massive buttresses which divide the chapel into bays. Between each buttress is placed a two-light traceried window, below which is an ornamental band containing the coats of arms of the knights, surrounded by the badge of the Order. With one exception, all the work has been executed by Scotch craftsmen and women. The woodwork was carved by Messrs. W. and A. Clow; all the stonecarving was done by Mr. Joseph Hayes; all the woodwork is of English oak, and was executed by Messrs. Nathaniel Grieve and Co.; the stained-glass east window, representing St. Andrew, is by Mr. Douglas Strachan. All these are of Edinburgh; but the heraldic stained glass windows were carried out in glass by Mr. Louis Davis, of Pinner, from designs supplied from Edinburgh. The builder is Mr. John Kennedy, Edinburgh.

ROYAL COLLEGE OF SCIENCE, DUBLIN.

The new Royal College of Science, Dublin, which was opened by King George during his Majesty's recent visit to Ireland, supersedes the old College of Science on St. Stephen's Green, and is situated at the rear of Upper Merrion Street. The buildings are arranged in the form of the letter E, and will constitute the western and part of the northern and southern sides of a quadrangle, 223 ft. long by 190 ft. wide, of which the remaining sides will be enclosed by the buildings of the new Public Offices to be occupied by the Department of Agriculture and the Local Government Board. The Public Offices are to be proceeded with immediately when the transfer from the old to the new College is made this autumn. The front will face Merrion Street, and will have an opening of 80ft. in the centre, forming the principal entrance to the quadrangle, and affording a view from the street of the portico and central dome of the college. There are also entrances to the quadrangle through handsome archways on the north and south sides. The main entrance to the college is under a fine Ionic portico with pediment, forming, with the dome above, the central feature of the western side of the quadrangle, and in the pediment is a finely sculptured seated male figure, allegorical of "Study," the work of Mr. Oliver Sheppard, R.H.A. The height of the dome to the top of the cupola is about 120ft. above the ground.

The architectural treatment of the exterior may be described as Classic Renaissance of a free English type, and the materials used are Ballyknocken granite, with Portland stone dressings to the doorways, windows, and in the cornices. There is an open balustrade of the same stone forming a parapet around the flat roof, with handsome carved urns at the angles. The north and south archway entrances have large columns in relief with broken pediments in which are carved the Royal Arms and monograms of the late King Edward and King George. Over the main entrance is carved the following inscription: "Inceptvm Edwardi VII. An. IV.—An. II. Georgii V. Perfectvm."

The interior is approached by a short flight of granite steps leading through the main portico to an arched vestibule, from which extend broad corridors to the right and left, and a grand marble staircase leading to the other floors, which, with the ground floor, are four in number. On these floors are disposed numerous laboratories and lecture rooms opening off the corridors, the principal of these being the great Lecture Theatre, 70 ft. in length by 35 ft. in width, to the west of the entrance hall, and to the Chemical Laboratory in the south wing, 60ft. wide and 75ft. long, and extending through two storeys of the building in height. Beneath the dome are the students' common room on the second floor and smoking room on the third floor. There are staircases in the north and south wings, as well as the grand staircase in the central part, and these, as well as the corridors, are lined and paved with black and white marble, the entrance hall and corridor paving being in chequer pattern.

The heating of the building is by means of steam ventilating radiators, which are fitted in all rooms and corridors, and electricity is used for light and power. The laboratory fittings are of an elaborate character, and have been made entirely by the building contractors in Dublin; it is estimated they will cost about £15,000. At the rear of the main buildings is a large block, 70ft. by 50ft., forming the mechanical engineering laboratory, which is connected with the college by a subway; and on the south side of Merrion Place a further block of buildings, some 230ft. in length, has been erected as workshops for the Board of Works Department, and for the Science and Art Museum. The total cost of all these buildings and fittings will be about £140,000.

The contractors for the excavation and lower portion of the walls were Messrs. H. and J. Martin, of Grand Canal Street, but the whole of the rest of the work, including fittings, has been carried out by Messrs. McLaughlin and Harvey, of Dartmouth Road, Dublin.

The architects are Sir Aston Webb, R.A., C.V.O., and Mr. (now Sir) Thomas Manly Deane, B.A., R.H.A., eldest son of the late Sir Thos. N. Deane, R.H.A., and grandson of Sir Thos. Deane, of Cork, P.R.H.A. Sir Thomas Deane (whom the King knighted at the opening ceremony), in partnership with his late father, was architect of the Science and Art Museum and National Library of Ireland.

CONCRETE AND STEEL SECTION

(MONTHLY.)

Moot Points in Reinforced Concrete Design.

The iconoclast, the cocksure critic, the doubting Thomas, or the exhaustively questioning Soc- ates, have, doubtless, most excellent ses, and it is therefore fortunate that they ake occasional incursions into the omain of reinforced concrete. They at ll events prevent stagnation of ideas; and ccasionally they effect valuable reforms. Mr. Edward Godfrey, a member of the merican Society of Civil Engineers, has ell stated the position, which is in some espects his own. He has read to that ociety a paper of which the purpose was to show that reinforced concrete engin- ers have certain rules and practices which re no more logical than the blood-letting" hich was once a principle of practice in e medical profession; and "if," he says, the writer fails in this, by reason of the ore weighty arguments on the other side f the questions he propounds, he will at east have brought out good reasons which ill stand the test of logic for the rules nd practices which he proposes to con- emn, and which, at the present time, are uite lacking in the voluminous literature n this comparatively new subject." That the justification of the searching ques- oner: whose doubts, however, are apt to ave a mischievous effect when they are ommunicated to people who have not the ower to resolve them.

The Bend of the Rods.

Mr. Godfrey's first point is that engineers "perpetrate a gross error" in making a sharp bend in reinforcing rod under stress. He con- ends that if the rod be given a gentle urve of a radius of twenty or thirty times e diameter of the rod, the side unit ressure will be from one-twentieth to one- irtieth of the unit stress on the steel. Mr. J. R. Worcester replies that in prac- ce, although drawings may be made with- ut indicating the curve, metal is seldom ent at a sharp angle. Another speaker oes still further and says that in practice arp bends are never used. Mr. L. J. lensch replies to the same effect, and Mr. urner makes the point that common un- atented stirrups are very inferior in alue to those used by first-class construc- rs: and other writers or speakers sup- orted these views.

Beams, and the Anchorage of Rods.

Mr. Godfrey's "points of indictment against common practice" are sixteen in number, and may erhaps be here usefully summarised:— 2) That beams are left without bottom- ange reinforcement by the last rod being ent up to the top of the beam, and thus ken out of the region where the con- ete has the greatest tendency to stretch. 3) That the anchorage of rods by the em- edment of a few inches of their length in oncrete, in retaining walls, is a violation common sense, as rupture could easily ccur by the pulling out of these short ds. (4) That "concrete is about one- irtieth as strong as steel in bearing, and ere is therefore somewhat less than one- irtieth of a reason for specifying any ear on steel rods embedded in concrete.

Rods and Shear.

(5) That it is a common practice to count vertical stirrups as taking the horizontal shear in a beam, but these stirrups can take but little hold on the reinforcing rods, and they can take but little shear. (6) That if the shear rods take but a part of the shear, leaving the concrete to take the remainder, that carried by the rods should not be divided again, as is recommended by the common method. Mr. Godfrey holds that in shallow beams there is little need of provision for taking shear by any other means than the concrete itself, and that in such a beam some of the rods should be curved up towards the ends of the span and anchored over the support. (7) That commonly bending moments in so-called continuous beams are juggled to reduce them to what the designer would like to have them. (8) That, concerning the spacing of rods in a reinforced concrete beam, it is common to see rods bunched in the bottom of such a beam with no regard whatever for the ability of the concrete to grip the steel, or to carry the horizontal shear incidental to their stress to the upper part of the beam.

Elaborate Formulæ.

(10) That elaborate theories and formulas for beams and slabs are commonly based on assumptions which are inaccurate and untrue; whereas "if, in all cases, the neutral axis be taken at the middle of the depth of the concrete beam, and if variation of intensity of stress in the concrete be taken as uniform from this neutral axis up, the formula for the resisting moment of a reinforced concrete beam becomes extremely simple, and no more complex than that for a wooden beam. (11) That complex formulas for chimneys are unnecessary, because "it is a simple matter to find the tensile stress in that part of a plain concrete chimney between two radii on the windward side, and if in this space there is inserted a rod which is capable of taking that tension at a proper unit, the safety of the chimney is assured as far as that tensile stress is concerned. (12) That, in deflection calculations, if the beams be considered as plain concrete beams, and an average value be assumed for the modulus or coefficient of elasticity, a deflection may be found by a simple calculation which is an average of what may be expected.

Concerning Arches.

(13) That, concerning the elastic theory as applied to a reinforced concrete arch, the assumption of fixed ends is most extravagant and unnecessary. (14) That temperature calculations in a reinforced concrete arch have no meaning whatever, because, if the unstressed shape of an arch cannot be determined because of the unknown effect of shrinkage and settlement, it is a waste of time to work out a slightly different unstressed shape due to temperature variation; and it is a further waste of time to work out the supposed stresses resulting from deflecting that arch back to its actual shape. Mr. Godfrey claims that a simple and reliable method is to treat the arch as a series of blocks. (15) That it is erroneous to include in the strength of a concrete column slender longitudinal rods embedded in the concrete. (16) That, with reference to flat slabs supported in four sides, it is absurd to assume an intensity of bending clear into the corner of a slab, and on the very support equal to that at its centre. By Mr. Godfrey's method, strips are taken across the slab and the moment in them is found, considering the limitations of the several strips in deflection imposed by those running at right angles therewith: tests demonstrating that when the slab is oblong, reinforcement in the long direction rapidly diminishes in usefulness.

The Critic Criticised.

All the above points were elaborated with considerable skill, and with a sprinkling of the sarcastic humour which in America seems inseparable from any form of intellectual exercise. The paper was discussed at considerable length, and at the end Mr. Godfrey had to reply to objections to almost every point he had raised. Nearly all who took part in the debate, however, agreed that the main purport of the paper was a plea for simplicity, consistency, and—paradoxical though it may appear at first sight—of conservatism in design. Mr. Harry F. Porter, junior, thought that while Mr. Godfrey had fallen into the error of over-persuading himself of the gravity of some of his points, yet engineers would all agree that there is much in the average current practice that is erroneous, and much in textbooks that is misleading if not fallacious. On the whole, it is difficult to dissent from the view of Mr. J. S. Sewell, to whom it appeared that, to at least a part of the indictment, a plea of not guilty may be properly entered; and that, after all, some of the other charges do not refer to crimes. There is, says Mr. Sewell, "still room for a wide difference of opinion on many points involved in the design of reinforced concrete; and too much zeal for conviction, combined with such skill in special pleading as this paper exhibits, may possibly serve to obscure the truth rather than bring it out clearly." That is certainly one of the dangers of indictments of this well-marked type, which are apt to be (as Mr. Sewell implies in more polite language) what we should call "too clever by half." Still, they gave rise to an interesting discussion; and occasional review and reconsideration of the bases of operation is essential to healthy development. The discussion, at all events, has been thought by the American Society of Civil Engineers to be worthy not only of inclusion in its Transactions, but of independent publication in pamphlet form.

A Polyglot Dictionary of Reinforced Concrete.

The review, in last week's issue of the journal, of a new volume of the excellent Deinhardt-Schlomann series of technical dictionaries in six languages, reminds us that volume viii. of these dictionaries deals very usefully with the terminology of reinforced concrete, and is in fact entirely devoted to that subject, giving, moreover, about nine hundred illustrations of the definitions. Such a work would, if only on account of its diagrams, which figure almost every detail, be of considerable value to students of this method of construction who read nothing but English; but for those who are linguists the book is almost indispensable as a key to the abundant foreign literature of the subject. The English technologist is well aware of the utter hopelessness of consulting an ordinary dictionary when he is at a loss for a definition of some technical word in his own language; nor are foreign dictionaries better equipped. What is more, such technological dictionaries as exist—especially those that are polyglot—are nearly always lamentably deficient, for a reason that was perhaps never quite clearly realised until the present series began to appear. It then became evident that most of the technological vocabulary-makers had been attempting to do in one or two volumes what could only be adequately accomplished in fifteen or twenty. Of course, in reading a foreign article or treatise, the meaning of an unknown word or phrase can often be inferred from the context; but this is pre-eminently a case in which inference should give place to exact ascertainment, and to this end the Deinhardt-Schlomann series, in which each volume deals thoroughly and exhaustively with some special department of technology, renders invaluable assistance, as it does also in cases in which there is a necessity for expressing a known term in a foreign tongue. The volumes are published in London by Constable and Co., Ltd.

COMPRESSED-AIR MACHINE FOR APPLYING MORTAR AND CONCRETE.

The most familiar method of applying concrete or cement mortar as a protective coating to steel columns, beams, and girders consists in surrounding the steel members with wooden forms and pouring the wet mixture of concrete into place, employing some form of wire mesh or metal lath as an anchorage. Radically different is the method employed in covering the steelwork which forms a very important feature in the reconstruction of the Grand Central Terminal yards of the New York Central and Hudson River Railroad in New York City. On this work a new form of apparatus, known as the "cement gun," is being used.

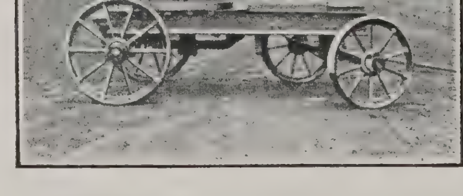
The essential parts of this machine, as shown in the accompanying illustration, consist of superimposed steel tanks forming two compartments, from the bottom of which a dry mixture of sand and cement, which is entirely under the control of the operator, is ejected by compressed air through a hose line carrying a nozzle at its discharge end. To this nozzle a second and smaller hose delivers a supply of water under pressure. The mixture of sand, cement, and water, the latter being applied to the dry constituents just before they emerge from the nozzle, shoots out through the nozzle orifice with considerable force and impinges upon the surface of the steelwork at which the nozzle is pointed. The mortar, issuing in the form of a spray, adheres to the surface of the steel, and forms a covering which may be made to any thickness desired. The hose and attachments are not shown.

The Grand Central improvements include the depression of the old railroad yard, and the creation of two new track levels, one above the other, the lower one for suburban service, and the upper one for express trains. Park Avenue will be carried above the upper level on a heavy steel viaduct. A large amount of the steelwork involved in this plan for supporting the track levels and street is to receive a cement mortar coating, and the application of this coating is rendered extremely difficult by the conditions under which the work has to be carried on. It is essential that operations be conducted in such a way as not to interrupt traffic, and the advantage of any scheme by which the cement coating can be applied quickly without the use of forms, and started and stopped at a moment's notice, is at once apparent. The traffic through the Grand Central yards is exceptionally large, involving considerably more than 1,000 train movements every 24 hours. Another difficulty connected with the work is the restricted space in some places, where the beams and girders are very close together. With the cement gun, however, the cement is shot into these openings with comparative ease.

One of the salient features of the apparatus is the method of regulating the discharge of sand and cement. At the bottom of the lower compartment there is a large feed wheel, with deep notches around its entire circumference. This wheel is revolved by a small compressed air motor, and the small charges of the sand and cement mixture collected in the notches or pockets around the periphery of the wheel are fed successively into the rapidly moving stream of air, which issues from the inlet connection. The material is blown through a curved outlet, and passes thence into the hose line, which supplies the discharge nozzle or gun. The rate at which the sand and cement may be discharged depends directly upon the speed of rotation of the feed wheel referred to above.

The quantity of air required for the operation of the machine, and also the water for hydration of the cement, depends upon the conditions under which the machine is operating, and the nature of the work to be done. The hose is furnished in 50 ft. lengths, and additional lengths are added as required. The nozzle through which the mortar is discharged is so designed as to insure a thorough hydration of the cement, and the water for this purpose is carried to the nozzle under the necessary pressure by a separate hose of small diameter, as before stated. That portion of the nozzle which is exposed to the abrasive action of the sand and cement particles is lined with a suitable composition, and as considerable wear takes place this is inserted in such a manner that it may be readily replaced.

The water comes in contact with the mixture of cement and sand just as it passes through the nozzle. The nozzle is furnished with an annular chamber from which the water is sprayed under pressure from a series of carefully proportioned orifices, and the hydration is there commenced and continued on to the surface to be covered. The quantity and pressure of water is controlled by the operator by means of a valve forming part of the nozzle.


COMPRESSED-AIR MORTAR MACHINE.

The mortar covering of the steelwork of the Grand Central Terminal yards will be subjected to a considerable amount of vibration due to passing trains, and it was therefore considered advisable to reinforce the coating with wire mesh to prevent cracks. A number of different types of mesh are being experimented with at the present time, and the final selection of any one has not yet been made. The wire mesh is bent approximately to shape on the ground, and hung round the steelwork just before the cement mortar coating is applied.

The mortar mixture issues from the gun nozzle at a velocity of some 350 ft. per second, and when it strikes the steel surface the large and coarse grains of sand rebound until a thin film of fine cement mortar, which immediately adheres to the surface of the steel, offers a plastic base into which the coarse sand particles become imbedded, and the mixture then builds up upon this film to any thickness desired. It is apparent, therefore, that when the swift-moving stream of material hits the steel surface, and in the interval between the time it strikes and the time the mortar cover starts to build up there is a tendency for the sand grains to clean off any rust on the steel, after the manner of the ordinary sand-blast. The deposition of the thin film of cement against the steel is decidedly advantageous, as it secures an excellent bond and makes an efficient protective coating over the metal. With the cement gun the mortar is literally shot upon the steel, with the result that a coating of great density is secured. Any superfluous water is driven out of the mixture by the force of impact, and the concrete takes its initial set in a short time. There is absolutely no possibility for the formation of voids or air pockets in the mortar covering applied by this method.

On the Grand Central work the force required to operate the cement gun apparatus consists of one man at the nozzle, one machine man, and two feeders, who keep the tanks supplied with cement and sand. The mortar covering applied by the gun is smoothed off with a wooden float, although a fairly even surface can be obtained by proper manipulation of the nozzle.

In addition to applying mortar coatings to steelwork the apparatus may be put to a number of other uses, and is especially adapted to the application of stucco to buildings. It also can be applied to the plastering of rock surfaces, and is efficient in filling up seams or cracks with cement mortar. Another important piece of work on which the cement gun has been adopted is in the lining of large steel inverted pipe syphons for the southern division of the Catskill aqueduct, which is being built by the Board of Water Supply of the City of New York. Some of these syphons are 11 ft. 3 in. in diameter, and the specifications provide that they shall be lined on the inside with a 2 in. covering of cement mortar. The application of a lining of this thickness by using inside forms has been tried, together with a number of other methods, in comparison with which the work and product of the cement gun has been favourably passed upon and accepted by the engineer of the board.

THE DESIGN OF STEEL STANCHIONS.

BY R. GILLETT.

n the following article it is proposed to
isider the design of the steel stanchions
t are met with in ordinary practice.
st of the text books published deal too
lusively with the theoretical side of
work, and neglect the practical aspect,
ich, in ordinary work is generally the
t item to be considered. Detail of
ign, also, is overlooked, and much ex-
ise is often caused through details,
ich, although sometimes theoretically
rect, are difficult to carry out, and con-
uently expensive. In the present
cle a method of calculating and detail-
an ordinary stanchion will be
cribed.

laving obtained the load coming on the
ichion, one of the first things to con-
r is the condition of the ends. Stan-
ons, as generally used, with cap and
plates, are known as "flat ends," and
should be used when selecting sec-
s from a table of stanchions, such as
iufacturers publish, that the strengths
e been calculated for such a condition
he ends. In some tables the ends are
n as "fixed," a thing that only really
irs in practice when a stanchion is con-
us through three floors and the floor
a rigid construction, such as concrete.
ection to carry the required load can
er be selected from a manufacturer's
e, taking care that the table is a reli-
one and that the ends are calculated
flat" or "fixed" as the case mav be,
that the loading is "central" and not
entric" or can be calculated from the
wing empirical formulæ :

$$p = 5{\cdot}9 - {\cdot}027 \frac{e}{r}$$

etween the limits $\frac{e}{r} = 20$ [165

$$\text{and } p = 2{\cdot}8 - {\cdot}0087 \frac{e}{r}$$

re p = safe stress per sq. in. in tons.
e = length of stanchions in inches
r = least radius of gyration in inches.

iese formulæ are for stanchions with
ends, and are based upon the best
tice.

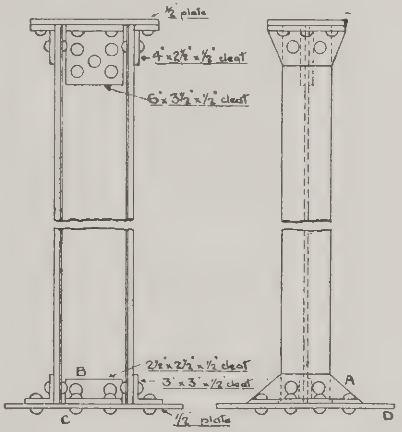
There are, of course, several different types of sections which will carry practically the same load over the same height. In the selection of a section it is better and cheaper to have a plain joist section where possible, and if a joist section is not strong enough, or is inconvenient on account of size, a compound section of joists and plates should be used. The section should be kept as square as possible for economy. Thus two 10 by 6 joists with 12 by ½ plates is a relatively more economical section than one 18 by 7 joist with 10 by ½ plates. A lot will necessarily depend on the details of the joists and girders to be carried. Do not select, unless absolutely compelled to, any out-of-the-way sections, or sections requiring awkward riveting. This caution might seem to be unnecessary, if one had not met with instances in which unwise choice had been made, for no apparent reason. The stock or common forms, besides being the cheapest sections, are the most readily obtained, and much delay is often caused by specifying unusual sections which are seldom rolled and rarely stocked.

Suppose the load required to be carried is 18 tons, and the height of the stanchion is 12 feet. A section to carry this load can be selected from a table or calculated from formulæ given above. If calculated from the formulæ, a section must be selected and then the formula applied to see if it will carry the load. For instance, suppose an 8 by 5 joist is selected. From a table of properties of sections we find that the least radius of gyration is 1.14 in., then

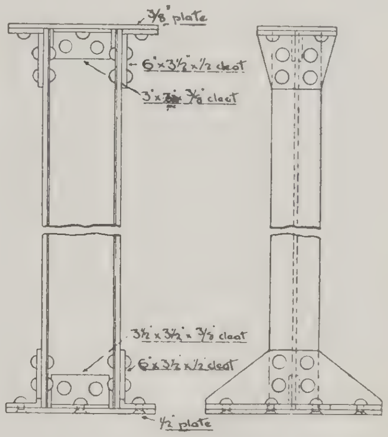
$$\begin{aligned} p &= 5{\cdot}9 - {\cdot}027 \frac{12 + 12}{1{\cdot}11} \\ &= 24 \end{aligned}$$

The area of the section is 8.24 sq. in. The section will therefore carry 19.7 tons, which is sufficient for what is required. The properties of joist sections are published in most manufacturers' books.

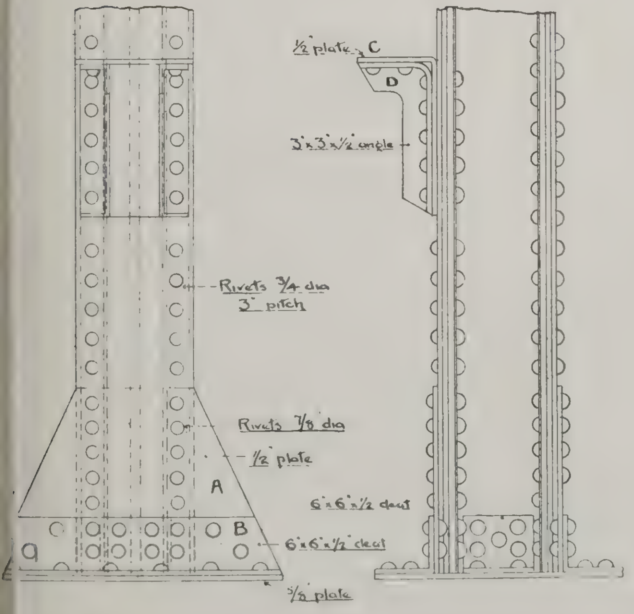
The next thing to consider is the number of rivets required to connect the shaft of the stanchion of the base cleats. Sufficient rivets should be provided so that the total safe shear stress on the rivets equals the total load on the shaft. It is not safe to assume that part of the load will be transmitted direct from the end of the shaft to the base plate, as in practice it often occurs that the end of the shaft does not touch the base plate at all.



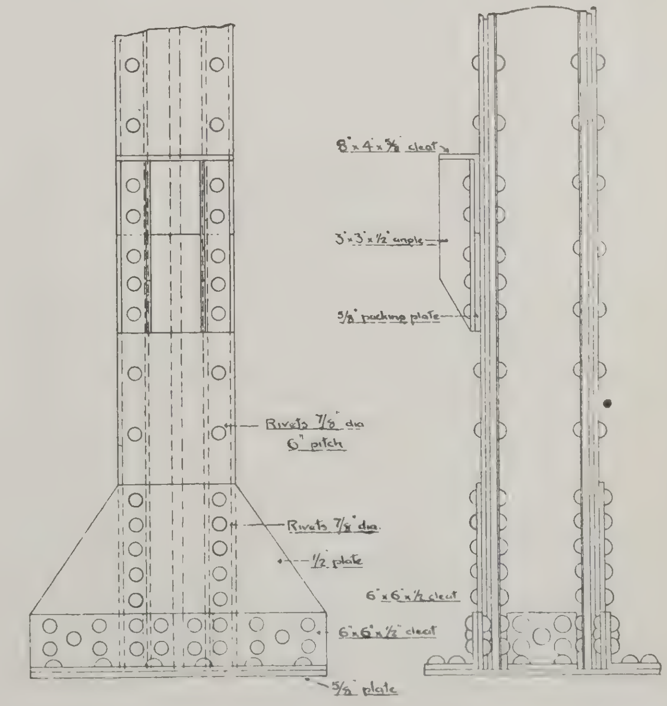
A



B



C



D

The Faults in some of these Designs are explained on the next page.

Taking shearing stress at 4 tons per sq. in. and reckoning on using $\frac{3}{4}$ dia. rivets, then the number of rivets in single shear required to connect the 8 by 5 joist to base cleats will be $\frac{18}{4 + \cdot 44}$ = say 10. The entries of rivets should not be closer than 3 diameters or less than 2 diameters from the edge of a plate.

Another important point to be remembered in specifying size of cleats is to use stock sections of angles where possible, which can always be readily selected from manufacturers' catalogues. For instance, 6 in. by $3\frac{1}{2}$ in. by $\frac{1}{2}$ in. angle is a stock section, whereas 6 in. by $2\frac{1}{2}$ in. by $\frac{1}{2}$ in. would have to be sheared from 6 in. by $3\frac{1}{2}$ in., or forged from plate, both of which operations would cause additional expense in manufacture without any advantage.

The sketch A shows a joist stanchion incorrectly designed, and B shows an alternative design, which, besides being more efficient, is cheaper to manufacture.

The faults in sketch A are as follows:—

Base.—Cleat A on flange of joist too small, making it impossible to get sufficient rivets in flange to carry load, also the cleat is sheared on the splay through both legs instead of merely having the corner sheared off as in stanchion B. The first method necessitates more work in manufacture, and not so strong a job. The web cleat, B, is too small to allow rivets to be put in as shown, viz., two heads on opposite legs in a straight line. The rivets C are not countersunk on the under side of base. This, besides making a bad bearing for the stanchion, often causes difficulty in fixing to correct levels. There are also more rivets than are necessary connecting the cleats to the base plate. The base plate projects too for beyond the base cleat, and being thus unstiffened is ineffective.

Cap.—Too much of the load is carried on the web instead of the flange of the joist. The web is the thinnest part of the section, and therefore whenever possible the majority of the rivets should be put in the flange to get more bearing area. The flange cleats are not a usual stock section. The cap plate is too thick, $\frac{3}{8}$ in. plate is thick enough for all ordinary purposes, as the load is usually transmitted to stanchions by steel girders, which have little tendency to bend the cap.

Sketches C and D show the base and brackets of a heavier compound stanchion. The faults in sketch C are as follows:—

Base.—The shaft of the stanchion is secured to the gusset plate, A, by 18 rivets, but the gusset plate is only secured to the angle cleat, B—which transmits the load to the base plate—by 12 rivets, so that six rivets in the gusset plate are practically useless. The cleats are sheared wrong as in the previous stanchion. The diameter of the rivets in the base is $\frac{7}{8}$, and those in the shaft $\frac{3}{4}$. Unless compelled to the diameter of rivets and bolts in this class of work should not be varied, as this entails extra work in manufacture.

Bracket.—In sketch C the bracket projects too far, and this has a tendency to increase the eccentric load on the stanchion. As a rule $3\frac{1}{2}$ in. to 4 in. is quite enough projection to carry the girders. The plate C is a forging instead of an angle cleat, and the stiffener, D, is also forged instead of a sheared Tee, necessitating extra riveting in top of bracket. Forged work should be avoided when possible owing to expense. Sketch D shows the same bracket, which is quite as strong and effective without any forged work at all.

TESTING A SYSTEM OF REINFORCED CONCRETE.

A series of tests of the Perfector Trussed Bar System of reinforced concrete construction were conducted at Messrs. David Kirkaldy and Sons' Laboratory, London, in January last, when, the tests being carried out quite publicly, many eminent engineers and several architects took the opportunity of witnessing them.

Concrete Cube Tests.

In order to determine the ultimate value of the concrete in compression in these beams, 9 cubes, 6 in. by 6 in. by 6 in. were made by Messrs. Kirkaldy and Son of the concrete as used in the beams. These cubes were tested: 3 at 1 month, 3 at 2 months, and the remaining 3 at 3 months, and the average results, as shown by the Certificate of Test, are as follows:

Age.	Weight. lbs.	Crushed.		
		Stress lbs.	lbs. per sq. in.	Tons per sq. ft.
30 days	17·93	58433	1623	104.4
60 days	17.98	77943	2165	139.3
90 days	17.87	88900	2469	158.8

As the beams were tested two months from the date of casting, the value of the ultimate strength of the concrete in the beams has been taken at 2,165 lbs. per sq. in.

Steel Tests.

Tensile tests on three pieces of Perfector Bars cut from the beams after testing, were also made by Messrs. Kirkaldy, and the following averages are extracted from their Certificate:—

Elastic limit per sq. in.		Ultimate strength. per sq. in.		Ratio of Elastic to ultimate per cent.	Extension per cent	
lbs.	tons	lbs.	tons.		In 8 dias.	In 8 ins.
42200	18.8	63666	28.4	66.3	27.6	24.6

The beams were ordinary commercial beams, and not in any sense laboratory beams on the filling and ramming of which extra care had been expended with a view to obtaining the best possible results; the object of the tests not being to produce beams of maximum strength, but to show the reliability of the Perfector Trussed Bar System under ordinary working conditions. In pursuance of this object the materials of which the beams were made, and the moulds in which they were cast, were procured from a reinforced concrete building in course of erection in the neighbourhood.

Test of T-Beam, SS 4654, January 19th, 1911.

This beam failed partly by tension and partly by shear, and after the ultimate load had been reached it broke down completely by shearing at one end. The safe calculated superload for the allowed stresses was 11,500 lbs. At 22,000 lbs. load two fine hair cracks appeared near the centre, and with an addition of 4,000 lbs. load five more tensile cracks appeared.

At 32,000 lbs. load two fine shear cracks were observed, and these finally opened out and multiplied at one end of the beam until the concrete was entirely disintegrated and no longer able to give any support to the stirrups near their lower ends; the concrete here, on being cleared away, showed the stirrups still firmly anchored throughout the top two-thirds of their length, but below this point they had been bent forward towards the centre of the beam after the concrete became disintegrated; this movement had taken place partly by direct bending, and partly by buckling when the lateral support was removed.

There was very little evidence of adhesion between steel and concrete in this beam, the surfaces of concrete which had been in contact with the steel coming away quite clean and polished. Samples of this concrete were taken away by several of the visitors. In this case of failure of adhesion, it is fair to assume from the observed evidences of intense stress to which the mechanical bond between the stirrups and tensile reinforcement had been subjected, that in the absence of this bond the tensile reinforcement would have slipped very much sooner, and have caused failure almost immediately; whereas actually, after the first shear cracks had appeared, it was possible subsequently to almost double the load which was then on the beam before failure finally occurred.

Had sufficient stirrups been included in the beams to provide fully against shearing stresses, as would of course be the case in an actual structure, the extra anchorage so obtained for the tensile reinforcement would have been sufficient to have prevented even the bruising of the metal at the points of contact of the stirrups with the web of the bar, and so have prevented any slipping of the latter.

T-Beam SS 4656, January 23rd, 1911.

This beam behaved much in the same way as the last one. The cracks developed very symmetrically and at fairly even distances, being vertical in the centre, and gradually spreading out fanwise on nearing the supports, where they assumed the usual angle of 45 deg. for cracks due to shear alone. Only a very slight slip was noticeable in the tensile bars at a load of 36,000 lbs., and the stirrups showed no movement at all on being uncovered, only slight bruising being noticeable.

The concrete in this beam was of good quality, and such as would be expected to give good values in adhesion. The concrete at the edge of the slab was therefore broken away at the centre of the beam, exposing about 3 in. of the $\frac{3}{8}$ in. round rod slab reinforcement, when it was noticed that there were no particles of concrete adhering to these rods, which came away clean except for a powdery coating. A similar bar at the end of the beam was then exposed where the concrete had not been subjected to any stresses, with much the same result; and i is worthy of note that these bars had no been stressed, or undergone any latera contraction, nor had they undergone any stripping action due to slipping.

To test the adhesion, an ordinary fitter's hammer was taken, and an attempt made to drive the bar at the centre of the beam through the concrete. It moved at once under very moderate blows.

It being reasonably supposed tha adhesion might have been destroyed here by the stresses in the concrete, althoug the bar was almost on the neutral axis experiments were made on other rods a the end of the beam, several of the visitor taking the hammer with the same result except that these bars appeared to move even more easily.

The resistance of these rods to movement on the assumption that adhesion reaches an ultimate value of 400 $\frac{\text{lbs.}}{\text{sq. in}}$ should have been 14,100 lbs., their lengt in the concrete being 2 ft. 9 in., and circumference 1.175 inches.

$$\therefore \text{Resistance} = 1.175 \times 2.75 \times 12 \times 400$$
$$= 14,100 \text{ lbs.}$$

The idea that adhesion reached any such values in these beams may therefore b

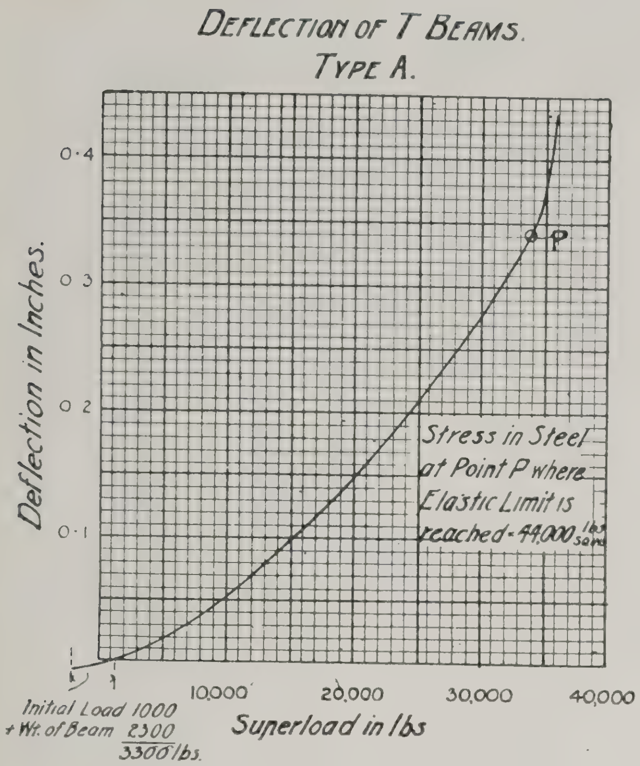


Fig. 1.

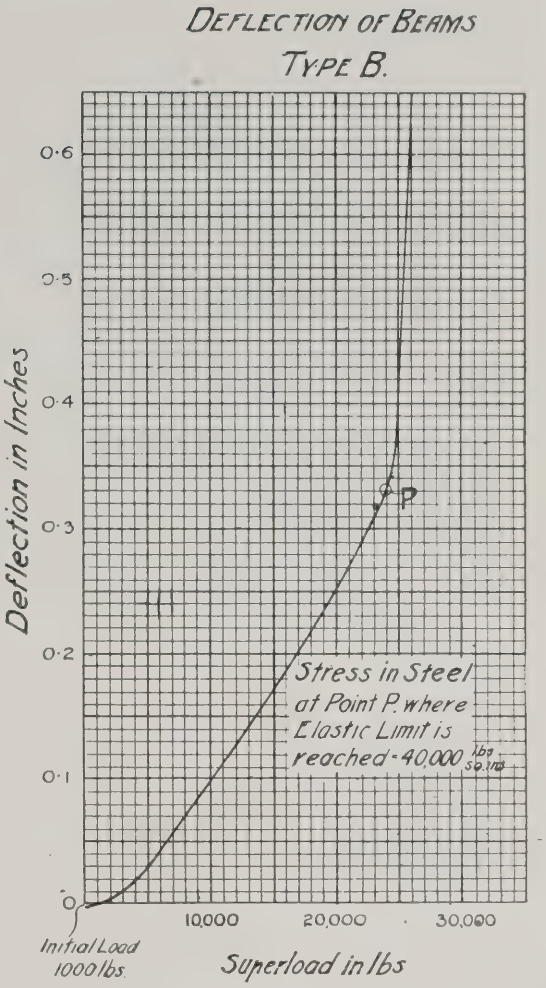


Fig. 2.

lismissed, and it may be assumed that in a uilding of three to four years' standing, n which the steel had undergone tensile tresses and consequent lateral contraction, at the same time that it had been xposed to shocks due to rolling loads, or o vibratory loads such as machinery, the ssistance rendered by adhesion would be ery much impaired, and would, perhaps, ave failed completely.

Rectangular Beams, Type B (Double Reinforcement).

The first hair cracks appeared in the oncrete at a total load of 16,000 lbs.

or $\frac{16,000}{6,219} = 2.58$ times the theoretical load.

There were no signs of shear in any of hese three beams, nor any slipping of the einforcement right up to ultimate failure, otwithstanding the fact that when the oad was approaching the ultimate and he concrete in the middle 5 ft. or 6 ft. of he beam was badly cut up by tension racks. The only effective anchorage which e rods had was due to the stirrups in he remaining 2½ ft. of beam near the upports at either end.

Rectangular Beams, Type C (Single Reinforcement).

The first hair cracks did not appear ntil a 16,000 lbs. load was reached in each eam;

or $\frac{16,000}{5,330} = 3.0$ times the safe load.

The failure in these beams occurred in xactly the same manner as with the oubly reinforced beams, Type B, except at in SS 4661 two very slight shear cracks ppeared at a load of 20,000 lbs., which as 3.75 times the safe load for the beam; ese, however, did not subsequently open ut any wider, and the beam finally failed lmost simultaneously by extension of the eel at a stress of 50,400 $\frac{\text{lbs.}}{\text{sq. in.}}$ and by ushing of the top fibres of concrete in mpression.

There was no drawing in of the tensile inforcement in any of these three beams, though signs of slip were most carefully atched for.

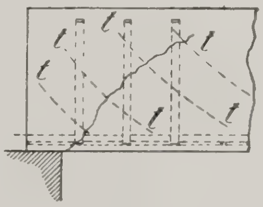


Fig. 4.

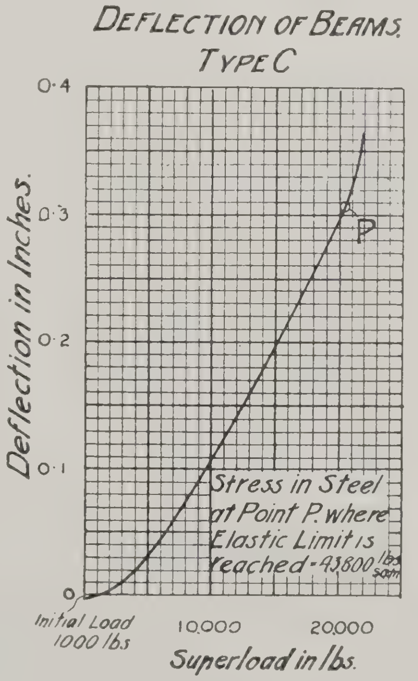


Fig. 3.

Deflections.

To consider the deflections, it will be seen by reference to the curves plotted and shown in Figs. 1, 2, and 3, that as soon as the elastic limit of the steel is reached, the deflection begins to mount up very rapidly until, with a comparatively small addition of load, the beam breaks down altogether; the first failure in beams of Type A is here shown to have been due to the undue elongation of the steel causing the large wedge-shaped cracks in the concrete, which finally reached and passed the neutral axis, throwing a portion of the concrete out of action, and the remaining fibres at the top then crushed.

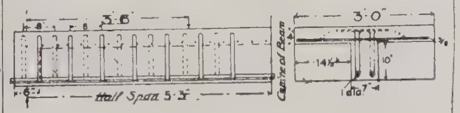
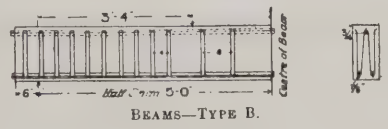
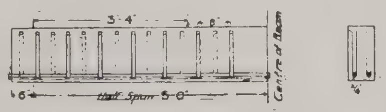
Test of T-Beam, SS 4655, January 20th, 1911.

This beam gave somewhat better values than the first one tested, as will be seen from the Certificate of Test, and although several rather severe shear cracks appeared, they showed very little tendency to open out after their first appearance, although the load was subsequently increased from 24,000 to 40,540 pounds; this is attributable to the fact that the stirrups do not follow the lines of principal tensile stress in the beam, but cross them at an angle and afford considerable locking action, while at the same time they hold the tensile reinforcement.

Referring to the accompanying Fig. 4, the dotted lines marked *t t* show the direction of the principal tensile stresses in the beam, and the concrete tends to open up along lines at right angles to these, giving the typical shear crack.

The masses of concrete on each side of this fracture are trying to move along the lines *t t*, but it is obvious that they cannot do so without deforming the stirrup, or unless the stirrup actually crushes its way through the masses of concrete on either side of the fracture. This can only happen if the concrete becomes absolutely disintegrated from top to bottom.

As the loading proceeded, the concrete of the rib near the centre of the beam began to open up in tension, until these cracks became so wide and long that they reached and passed through the neutral axis of the beam into the compression area. The beam then failed completely, the concrete also failing in compression.

Distance, top of beam to centre of tension reinforcement.	Test No.	DESCRIPTION.	Dimension	Span.	Stress in Pounds, Deflection, inch at																					Ultimate Stress.	REMARKS.
	SS		Inches		2,000	4,000	6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000	30,000	32,000	34,000	36,000	38,000	40,000	42,000	lbs. tons	
inches		AGE TWO MONTHS.		Centres																							
11·5	4654	Reinforcement 2-Perfector Bars 1" dia. 11'-3" long, threaded with stirrups 1"x ⅛"	14·1 4·00 35·6 7·23 4·03	10'– 6'	·006	·013	·022	·040	·056	·071	·092	·111	·130	·150	·175	·200	·226	·250	·284	·329	·372	·54	...	...	...	37,800=16·9	lbs. At 22,000 two fine hair cracks, near centre. „ 26,000 seven hair cracks symmetrically spaced. „ 32,000 two fine shear cracks. „ 34,000 cracks well developed.
12·05	4655	 BEAMS—TYPE A.	14·25 4·04 36·1 7·14 4·10	„	·006	·013	·025	·039	·057	·074	·092	·112	·131	·150	·175	·200	·227	·251	·278	·306	·337	·427	·70	1·05	...	40,540=18·1	At 20,000 two fine hair cracks, near centre. „ 24,000 very fine shear crack each end. „ 28,000 two more shear cracks, well defined and steel rods drawing in.
12·82	4656	Also ⅜" dia. Rods straight and curved alternative, spaced 5" centres apart (as per sketch).	14·40 4·11 35·8 7·23 4·12	„	·004	·011	·021	·034	·049	·064	·080	·097	·118	·143	·167	·190	·215	·238	·262	·287	·312	·344	·405	·50	·76	42,480=19·0	At 20,000 two slight hair cracks. „ 30,000 seven tension and four shear cracks. „ 36,000 shear crack at haunch, and steel rods drawing in.
				Mean	·005	·012	·023	·038	·054	·070	·088	·107	·126	·148	·172	·197	·223	·246	·275	·307	·340	·437	...	...	...	40.273=18·0	
11·75	4657	Reinforcement 3-Perfector Bars, ¾"&⅞" dia. 11'-3" long, threaded with stirrups ¾"x⅛" Total Weight, lbs.—1213 (metal 95·50) 1165 (metal 93·40) 1175 (metal 95·95)	14·05 7·23 7·43 14·07	10'—0'	·003	·017	·042	·071	·102	·133	·164	·194	·229	·264	·305	·347	1 12	...	...	...	...	...	...	...	...	26,010=11·6	lbs. At 16,000 five fine hair cracks, near centre. „ 20,000 two more cracks, outside load-bearings. „ 24,000 cracks developing, no sign of shear.
11·80	4658		14·25 7·10 7·23 14·10	„	·003	·010	·026	·051	·076	·101	·128	·158	·189	·219	·257	·292	·394	...	...	...	...	...	...	...	...	27,045=12·1	At 16,000 one fine hair crack under one bearing. „ 20,000 four cracks, two under each bearing. „ 26,000 eight cracks, fairly symmetrical.
11·82	4659		13·97 7·40 7·36 13·92	„	·007	·031	·058	·090	·121	·150	·180	·210	·240	·271	·31	·354	·437	...	...	...	...	...	...	...	...	27,100=12·1	At 16,000 one hair crack near centre. „ 20,000 three cracks near one bearing. „ 24,000 seven cracks, fairly symmetrical.
		BEAMS—TYPE B. (Spaced as sketch).		Mean	·004	·019	·042	·071	·100	·128	·157	·187	·219	·251	·291	·331	·650	...	...	...	...	...	...	...	...	26,718=11·9	
12·16	4660	Reinforcement 2-Perfector Bars, ¾" dia, 11'3" long, threaded with stirrups ¾"x⅛" lbs.-1160 (metal 53·25) 1165 (metal 52·90) 1153 (metal 53·15)	14·02 7·14 7·22 14·00	10'—'0	·006	·023	·047	·078	·109	·142	·175	·210	·245	·290	·375	...	...	...	...	...	...	...	...	...	...	22,880=10·2	lbs. At 16,000 five fine hair cracks, three between bearings and two under. „ 20,000 seven cracks fairly symmetrical. „ 22,000 ten „ „ „
12·13	4661		14·18 7.16 7·26 14·14	„	·003	·017	·041	·073	·105	·141	·180	·220	·265	·316	·392	...	...	...	...	...	...	...	...	...	...	23,240=10·4	At 16,000 four fine hair cracks, two between bearings and two under bearings. „ 20,000 slight shear cracks each end.
12·45	4662		14·06 7·15 7·35 14·16	„	·006	·022	·051	·083	·115	·147	·180	·215	·249	·288	·336	·411	...	...	...	...	...	...	...	...	...	24.160=10·8	At 16,000 one fine hair crack under one bearing. „ 20,000 five cracks, no sign of shear. „ 24,000 eight cracks, symmetrical.
		BEAMS—TYPE C. (Spaced as sketch).		Mean	·005	·021	·046	·078	·110	·143	·178	·215	·253	·298	·368	...	...	...	...	...	...	...	...	...	...	23,427=10·5	

These tabulated results of experiments to ascertain the resistance to deflection under a gradually increased bending stress of nine reinforced concrete beams made by the Perfector Buildings and Constructions, Ltd., were prepared by Messrs. David Kirkaldy and Son, who tested the beams The proportions of the materials were—4 cub. ft. ¾ ins. ballast; 2 cub. ft. sand; 1 cub. ft. (80lbs) Ferrocrete cement; water, 4 gallons. The load was applied at two positions, spaced each at one-third of span, and the deflections were measured at centre. The deflections of beams Type A were measured at each edge of the decking, the mean of the two sets being reported. Initial stress, 1,000 lbs.

RESULTS OF TESTS OF REINFORCED CONCRETE BEAMS.

The reinforcement slipped also in this ase just enough to be detected by the ye at the exposed ends, which had been arefully marked, one bar drawing in at ne end only, and the other at the opposite nd.

The stirrups were afterwards exposed by reaking away the concrete from the ower part of the rib. They showed no igns of movement in the concrete, the nly evidence of the severe stresses to hich they had been subjected being in he bruising at their contact with the eb of the bar. The curved portion also ound the bend at the bottom had acted s a circular girder, and showed this learly by extension of the fibres under ension and shortening of those in compression, resulting in a decrease in the adius of the bend at the back, and a coniderable enlargement in front towards e centre of the beam.

We understand that a detailed and fully lustrated account of the tests may be btained from The Perfector Buildings nd Constructions, Ltd., 36 and 38, Vicoria Street, Westminster.

MORTAR AND CONCRETE MIXERS.

Machine mixing is generally recognised s being indispensable in large building perations, not only because of the labour saves and the speed it ensures, but ecause of its supremely important advange, as compared with hand mixing, of ielding reliable results in uniformity or omogeneity of the output. The Leipziger ement Industrie, Dr. Gaspary and Co., f Markranstädt, near Leipzig, are, as eir title implies, specialists in this class f machinery, of which they manufacture veral different forms, adapted to various rvices. The machines include some that erate on the intermittent system, and hers that are adapted for continuous orking; some that are suitable for operatg by hand, and others for which power employed.

A hand-mixer (for which, however, power ay be employed) is shown by Fig. 1. his, as usual with intermittent machines, of the rough type. The material, fed in easured quantities through the trough, mixed by means of either rigid or rotatg arms or blades. The trough is emptied y tilting, and the moistening of the aterials is effected by means of a perrated pipe fed from a water-supply box tuated above the trough.

Fig. 2 shows a funnel-plate mixer, to hich the material is automatically measured and continuously fed, the mixing action being regulated and controlled by means of differential gear. The moistening is also effected in the mixing trough. This type of mixer is made in various sizes, and is operated either by hand or power. In the latter case the output ranges, according to the size of the machine, from two to twenty cubic metres an hour.

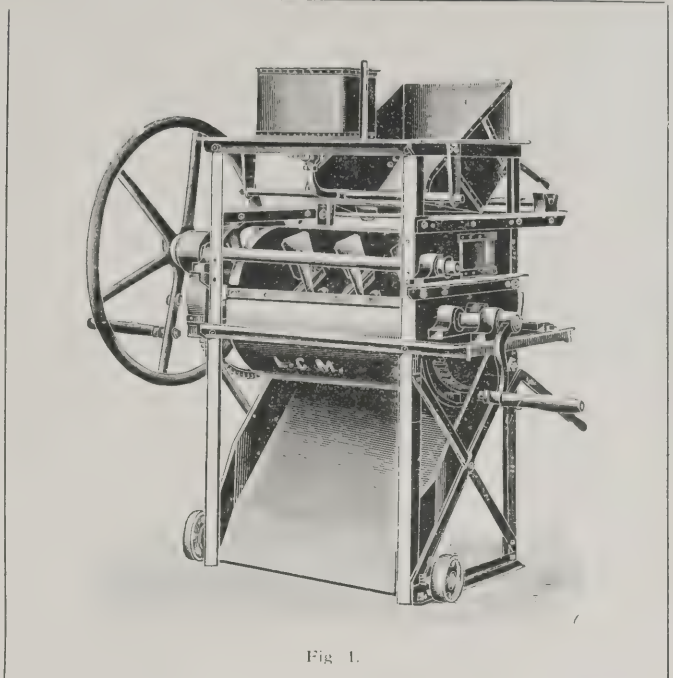


Fig. 1.

The Universal Mixer (Fig. 3) is adapted for either continuous or intermittent feeding. Thorough mixture of the materials is ensured by the facilities provided for changing the direction of rotation of the mixing drum. The change, which is effected by means of a lever, can be repeated as often as necessary, and is therefore very effectual in attaining the supreme object of intimate admixture of the material. Other advances of this change of direction are that when drum and blades are moving in the same direction less power is required, while not only are the emptying and cleansing of the drum greatly facilitated, but any stones or other hard portions of the aggregate that might otherwise stick fast between the walls of the drum and the mixing blades are dislodged by the change of rotation. Breaking of the mixing arms is effectually prevented by providing the arms with moveable blades; and the drum is opened and closed without interrupting the rotation, the cover being slid off in the radial direction, with a minimum of wear-and-tear to the cover and the mould-casing. They are constructed for driving powers of 6 to 17 h.p., and the efficiency ranges from 6 to 40 cubic metres. The Universal Mixer is also constructed with an open mixing trough instead of the drum; the emptying of the drum being effected by opening the swinging door from below.

These mixers are adaptable to various materials and circumstances, and the manufacturers are, we are informed, always glad to show the machinery in operation, and to give advice as to the selection of machinery for use under specific conditions.

CONCRETE AND URBAN BEAUTY.

Writing in the "Morning Leader" under this title, Mr. L. G. Chiozza Money, M.P., upon whom seems to have fallen the mantle of the hero of "Sartor Resartus," as Professor of the Philosophy of Things in General, observes, concerning the æsthetic treatment of concrete, that

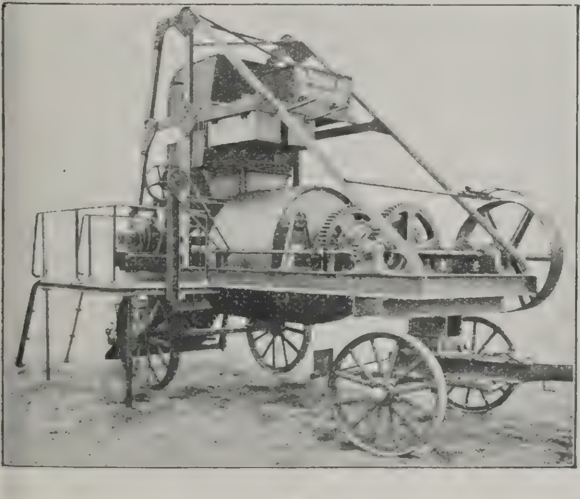


Fig. 2.

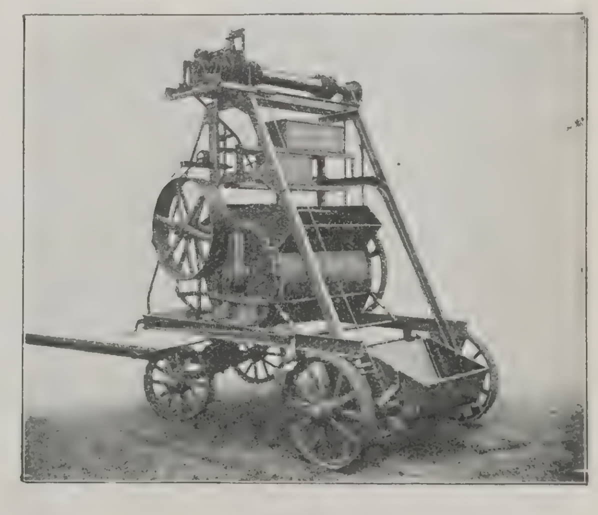


Fig. 3.

it is of the first importance to us all that this important side of the new industry should receive attention. Of course, he says, it is far better that a concrete building should be made to look like a brick or stone building than that fancy should run riot in all sorts of pastrycook design. Nevertheless, he thinks that it is rather a pity that our architects are not giving the attention to concrete which it is receiving abroad.

That concrete has come to stay, he sees no possible doubt. It is economical, safe, and fire-resisting. There is no doubt, he ventures to predict (and here we think that the mantle of Elijah hardly becomes him so well as the mantle of Teufelsdröckh), that some day it will oust brick entirely, even for small buildings. It lends itself to every sort of design, and it is so eminently plastic that there is great danger of uglification arising in connection with it. A concrete building is exceedingly durable, and all the architectural mistakes made in concrete will have a terribly long life. That is the worst of ugliness in building. A bad picture we need not look at; ugly music we need not listen to; ugly buildings we cannot escape from. Mr. Money hopes, therefore, that the Institute of British Architects is giving special attention to the great building material of the future, that we may be saved a great many eyesores.

"I have before me," he says, "the photograph of a new London factory built in concrete. It is an excellent piece of work, and although it has a floor space of about 100,000ft., it was actually erected in five months, which speaks volumes for the rapidity of the method. To turn from the industrial to the artistic side, however, this building seems to me to be a warning. It is decorated with just the kind of ornament which one is tempted to apply to a building when one has a material like concrete, which can be used with so much facility. It is only fair to say that it is a thousand times better than the average brick factory, but a little more restraint in design would have been infinitely better."

THE BEST PAINT FOR IRON.

BY ARTHUR SEYMOUR JENNINGS.

It would be difficult to ask a more comprehensive question than that recently put by a Newcastle subscriber. He asks, "What is the best paint for iron?" To answer the question fully would take up every page of this issue, and many more besides. Obviously, there are many circumstances to take into account in determining what is the best paint for iron. A mixture which would prove excellent for iron in one position might be wholly unsuitable for another. It should be said at once that there is nothing like unanimity on this question, even among experts. Indeed, there seem to exist several schools, one believing in iron oxide, another in red lead, and a third in graphite (plumbago). We might even claim a fourth school as being in favour of white lead, although this particular pigment is, in my opinion, one of the worst which can be used for the purpose of protecting iron.

Special Conditions in Ironwork.

In considering the subject of paint which is to be used on iron, it must be remembered that the conditions are always wholly different from those which exist when wood is painted. In the latter case the state of the wood, whether quite dry or somewhat unseasoned, or perhaps not actually resinous, will to some extent determine the composition of the paint to be used; but in the case of iron there is but little doubt that electrolytic action is often set up which may under certain conditions have a very marked effect upon the coat of paint intended to act as a preservative. It must always be remembered, too, that iron is of a somewhat spongy nature, and absorbs freely the liquid portion of the paint. It is of the utmost importance that the surface of the iron be quite clean before any paint is applied, and the cleaning down may be done with wire brushes speedily and thoroughly. Of even greater importance is the freedom from moisture in the iron; and it is for this reason that iron is frequently painted before it leaves the foundry, so that it may not absorb moisture while on the way to the building where it is to be used.

Advantages and Disadvantages of Red Lead.

The advantages of red lead are that it forms a hard surface which dries quickly; but as against this it has been asserted that it soon perishes owing to its carrying a small proportion of oil. It may, however, be used for an undercoat with a different paint on top. In other words, the red lead is used for a foundation, and a suitable mixture for the top coat is employed, which will resist atmospheric conditions.

Some Useful Rules.

Red lead may be replaced by orange lead, which has exactly the same composition, but being lighter it does not settle in the pot. In a paper by Mr. J. Cruickshank Smith, F.C.S., B.Sc., read before the Paint and Varnish Society in April last, some very useful rules are given concerning the paint used on ironwork. The author says that the particles of a pigment should be reduced to the smallest possible size, and should be packed as closely as possible in the paint film. As to this, it may be remarked that it has been proved quite clearly that the durability of all paints depends very largely upon the fineness of the particles of which they are composed, and it has been proved by experiments that when two leads, one coarse and the other fine, were painted on a board side by side and exposed to the elements, the finest lead lasted nearly three times as long as the coarsely ground lead. It is probably because lamp-black, for example, is so very finely ground that it lasts so long; and this is true also of zinc oxide, which, being volatilised in the process of manufacture, consists of exceedingly fine particles. The second rule is that there should be an absolute perfection in the incorporation of the vehicle with the pigment; and, thirdly, the pigment and the vehicle should be properly proportioned, it being always borne in mind that the pigment is the real protective agent, while the vehicle binds the pigment, enabling it to spread uniformly over the surface, and to resist the action of the atmosphere and moisture. Other useful rules are as follows: (4) Volatilised constituents should be reduced to a minimum; (5) moisture should be absent from the paint, as also should be materials capable of yielding water on a product of partial decomposition; (6) acid and materials capable of giving rise to acid after the even and electrolytical action taking place should be absent; (7) the surface should be perfectly clean and free from moisture, rust, mill-scale and grease. Mr. Smith truly remarks that the first or priming coat is of great importance, and should partake of the nature of a filler. In this coat both the pigment and the vehicle should be carefully selected, as on it much of the efficiency of the succeeding coats will depend. Not only should all ordinary surfaces be painted, but special attention should be given to bolts, rivets, nuts, ends of plates and girders, and all flanges or angles which are to be bolted together, in order that the paint may form an insulating coating. The condition of "metal-to-metal" will certainly induce corrosion.

Iron Oxide.

There is much to be said in favour of iron oxide as a suitable pigment for iron structures, but it had been shown that the proportion of pure ferric oxide, which is frequently specified at 99 per cent., is not really necessary to be maintained. Andes, in his book on "Iron Corrosion," gives the official standard specifications used in various countries. On the Austrian State railways it is required that the work shall be painted with red lead for a first coat, which is to be thinner than the subsequent coats. Three coats in all are given, and it is provided that all painting in the open air must be postponed until the occurrence of a continuous spell of warm, dry weather. A stiff brush must be used for laying-on the first coat, in order to insure the penetration of the paint into all irregularities, joints, and cracks. In Vienna red lead is also used for the first coat. Here four coats are given, and there is a similar provision as to the weather. Surfaces that are inaccessible when the structure is put together must have been previously covered with a single durable first coat of red lead, and this paint must also be used for all the visible parts of the structure when put together. After the first coat is thoroughly dry, the work is made good with putty composed of red lead or zinc grey ground in linseed oil. Zinc grey is a by-product of zinc oxide manufacture. In other words, it comprises the portions of zinc oxide which were not completely volatilised. The final coat of paint in Vienna is white lead tinted to grey with a little black. This appears a little strange, because zinc oxide would doubtless serve the purpose very much better.

Pickling as an Alternative to Scouring.

In the Prussian State railways the usual provision is made as to cleaning from rust, dirt, scale, etc., by scouring with wire brushes, but the engineer allows as an alternative pickling with pure hydrochloric acid, afterwards coating with a layer of paint composed of hot linseed oil varnish with 10 per cent. of zinc oxide; and if the pickling has been performed, the adherent acid must be removed by dipping the parts in lime water, followed by rinsing in clean water and heating to 100 Cent. in boiling water. If the adherent water has evaporated, the iron is given a thick coat of paint consisting of 90 per cent. of good, thin, and quick-drying linseed oil varnish, free from water or acid, and 10 per cent. of zinc oxide. The iron is then set away to dry in covered rooms.

Virtues of a Mixture of Pigments.

As before noted in these columns, there has of late years been something like a revolution in the paint trade, and it is now generally recognised that a mixture of pigments is far better than a single pigment by itself. This is true also in regard to paints for iron; and instead of taking red lead or iron oxide, a mixture will be found preferable. The reader will be quite safe in specifying red lead or orange lead for the undercoat of a paint composed of a mixture of second coats, with perhaps a final coat of zinc oxide for protection.

A book published last year in the United States treats the whole of this subject at great length, and in a very practical manner. The title is "The Corrosion and eservation of Iron and Steel," by A. S. shman and H. A. Gardner. It is blished at 17s. This work, by the way, ntains the finest bibliography of works the subject of the "Preservation of n" that has even been published, and o contains recipes for composite paints ich the authors have employed with cess. We give a few of them with full nowledgments. In each case the ures refer to the percentage propor- ns:—Brown Zinc: Metallic brown utral), 60; zinc lead, 20; zinc oxide, 20. ocolate Colour: Metallic brown utral), 90; willow charcoal, 5; zinc omate, 5. Red: Bright red oxide (free m acid or sulphur), 95; zinc chromate, Red: Bright red oxide, 65; china clay, red lead, 15; zinc chromate, 5. Black: llow charcoal and bone black, 68; zinc omate, 2; inert, 30. Steel Black: Sub- ed blue lead, 60; willow charcoal, 20; t, 20. Green: Zinc oxide, 45; sublimed te lead, 25; inert, 15; zinc chromate, inhibitive Prussian blue, 5; medium ome yellow, 5. Green: Inhibitive ssian blue, 4; zinc chromate, 3; ome yellow, 8; asbestine, 15; zinc lead zinc oxide and corroded white lead, 70. ite: Zinc oxide, 60; corroded or sub- ed white lead, 30; asbestine, 10. ite: Zinc lead, 20; zinc ozide, 20; cor- ed or sublimed white lead, 50; koalin silica, 10.

will be noticed that the authors in t cases introduce a small proportion zinc chromate, and experiments have ved that this substance, when used perly, assists greatly in forming an tic and a durable paint for the preser- on of iron. Zinc-lead, which occurs in or two of the formulæ, is not much wn in this country. It is made by the ction of sulphate bearing ores of lead zinc, in a somewhat similar manner to process used in the manufacture of oxide; that is to say, the lead and ore is volatilised, and the fumes on ing are converted into pigments, ch are collected in bags. The pigment xceedingly fine, and consists of about al parts of zinc oxide and lead sulphate.

he present writer suggests that it ld be of immense service to engineers, itects, and others if a series of experi- ts could be conducted so as to ascer- by actual exposure tests the value of ous pigments and mixtures as preser- ves of iron, because it must be ac- wledged that our knowledge on the sub- at present is very meagre. It would be difficult to have various sheets of painted with different admixtures and osed in different parts of the country, for example, in an underground rail- , such as Snow Hill Station, in an nary position in London, in the ntry air, at the seaside, in a town like lnes, St. Helens, where chemicals are le, or, again, at Stratford. The paint ld have to be prepared to apply by a ctical scientist, so as to ensure exacti- , and we have no doubt that very ble information would be obtained. plates might be examined periodic- , and, after an exposure of, say, three s, be collected and exposed at one of engineers' and architects' conventions, a committee be appointed to examine report upon them with a view of pick- out those plates which had stood best. e Royal Institute of Architects would this matter up in conjunction with National Association of Master House ters, the Institute of Metals, the Inter- nal Society for Testing Materials, and Institution of Civil Engineers, facts ld be determined which would be of greatest service to all concerned.

TREATMENT OF CONCRETE SURFACES.

The following specifications for securing an attractive appearance in ordinary exposed concrete work have been presented to the (U.S.) National Association of Cement Users:—

For all surfaces of concrete that are to be exposed to view, face forms shall be straight, smooth, evenly matched, and water-tight, and so framed and fastened together at corners and angles with screws or clamps as to be detachable and removable without the necessity of jarring or of prying against the concrete. Any offsets that may appear at joints shall be dressed off flush, and any openings at joints or corners, or any known holes or other voids, shall be plugged flush with some stiff plastic substance, such as clay mixed with plaster of Paris or sand. Before placing the concrete, the whole surface of the face form shall be coated with petroleum or other water repellant, to prevent adhesion of the concrete.

The concrete shall be thoroughly mixed, be wet enough to flush, and be spaded against the face form to the point of being completely flushed against the form—that is, until the cement soup or grout follows and envelopes the spade. Then the spade is to be used to ram the concrete near the face, so as to push the aggregate of the concrete forward to the face, care being taken to obtain a uniform mix and texture at the face.

The work of placing concrete shall be continuous throughout definite stages, so that joints between different days' work shall be at some feature line, or be made truly straight and level.

On the day after placing concrete, or later, as will be determined according to the temperature and the weather and the setting quantity of the cement used, while the concrete is friable and pulverable, the forms shall be carefully removed, and the concrete surface immediately scrubbed until the surface film is removed and the aggregate is exposed to a uniform degree, and then rinsed off with water and kept moist for several days. If any void spaces appear, or if spalls are broken off, the defects shall be patched with similar mix immediately after the scrubbing, using the hand or a wooden float—not a steel trowel—for applying and smoothing the patches. After they are sufficiently set—say within from 5 to 24 hours—all patches must be scrubbed to the same texture as the general surface, and be rinsed clean and kept moist for several days.

If a granolithic surface is specified, it shall be made by placing against the face forms, in advance of the body concrete, a fine granolithic or facing concrete composed of one part Portland cement, 1½ parts sand, and 2½ parts pebble or crushed granite or other approved stone as may be selected, screened to pass ½-inch and be retained on ¼-inch screen, thoroughly mixed and soft enough for full flushing. This granolithic must be maintained between the body concrete and the face form in a thickness of about 1-inch, care being taken that the body concrete is rammed into and perfectly united with it. If iron or wooden mould-boards are used for retaining the granolithic against the face while placing the body concrete, care must be taken that the board be not permitted to remain until initial set takes place, but be frequently jarred and raised slightly at short intervals to prevent the formation of shuts and seams and air-spaces between granolithic and concrete.

For scrubbing the surface, ordinary fibre brushes, with a light stream of water from hose or can, will be sufficient if the set is not too hard. If set is harder, wire brushes, followed by fibre brushes and rinsing, may be used.

If for any reason a portion of the face form cannot be or fails to be removed before the concrete has become too hard for removing the surface film by scrubbing, the hard face shall be treated by sand-blasting or tool-dressing to a texture matching the scrubbed portion. If it be tool-dressed, it shall be cleaned after tooling by washing it with a 1 to 10 solution of muriatic acid and water, then thoroughly rinsing with water to remove all traces of the acid.

In scrubbing, or sand-blasting, or tool-dressing, care must always be taken to avoid roughening or blunting corners of the work, and to maintain all edges sharp.

THE SAFETY OF REINFORCED CONCRETE.

In an address before the Canadian Association of Builders' Exchanges, Mr. C. A. P. Turner, of Minneapolis, said that properly designed reinforced concrete could be more quickly and safely erected than any other type of building. This statement was made as the result of twenty years' experience in structural steel designing, and for the past ten years in the design of reinforced concrete construction.

As regards safety of construction, there have been admittedly failures in the erection of reinforced concrete buildings. There have also been failures in the erection of steelwork and in the erection of timber construction; in fact, wherever ignorance of proper design and scientific methods of erection have been displayed in the design or execution of the work. In the history of concrete work, however, it may be said that no failures have occurred in floors reinforced in multiple directions. Practically, according to Mr. Turner, all failures have occurred with one-way reinforcement, and generally where there was an insufficient lap of the reinforcing metal over the supports. In other words, safe concrete floor construction requires ample lap of reinforcement over the supports, and the thorough tieing of the work together.

In column construction data is not available covering a single failure where the column was well hooped and reinforced with a reasonable proportion of vertical steel. There have been a number of failures where an insignificant amount of hooping was used and a large amount of vertical reinforcement. Difficulty has occurred with columns which had a reasonable amount of hooping and an insignificant amount of vertical steel. These failures, occurring with certain specific types or classes of design which are from the engineering standpoint inherently objectionable, have led to unwarranted general condemnation of reinforced concrete by those interested in other methods of construction.

Thus it is evident that each and every one engaged in the reinforced concrete field is injured more or less by every failure, no matter what the cause. This being the case, it is incumbent on those who are commercially interested in the business to point out questionable methods of design and construction, and the the inherent risk involved in them, as clearly as they are able so to do.

ROYAL SANITARY INSTITUTE.

The preliminary programme of the 26th congress of the Royal Sanitary Institute, to be held in Belfast from July 24th to 29th, has now been issued. On the first day the Lord Lieutenant and Lady Aberdeen will open the Health Exhibition in the Ulster Hall, and in the evening Lord Aberdeen will instal the President, Lord Dunleath, who will deliver his inaugural address. Dr. Louis C. Parkes, Deputy-Chairman of the Council of the Institute will deliver the lecture to the Congress on "The Prevention of Tuberculosis: a National Task," on July 25th, and Professor Henry R. Kenwood, M.B., D.P.H., F.R.S.E., will deliver the popular lecture on "The Open Window" on July 28th. More than 200 authorities, including foreign and Colonial Governments, Government departments, county councils, county boroughs, and other sanitary authorities, have already appointed delegates to the Congress; and as there are over 4,000 members and associates in the Institute a large attendance is expected. At the Health Exhibition in the Ulster Hall a large space has been set aside for exhibits relating to the planning of cities and towns arranged by the executive committee of the Town Planning Exhibition. Excursions to places of interest in connection with sanitation, a conversazione, garden party, and other entertainments have been arranged.

PARIS BUILDING STRIKE.

The strike committee asserted that, on the first day of the strike (July 9th) they registered 60,000 strikers, but the information bureau of the Prefecture made the number only 18,000. The truth, as a special correspondent remarked in subtly ambiguous phraseology, "seems to lie between the two," but much nearer to the official estimate than the other. The best statistical estimate obtainable gave the strikers a two-thirds majority in a total of 25,000 generally employed in Paris and a proportion of rather more than a third among 13,000 employed in the suburbs. This result, however, although much smaller than that boasted of by the committee, is nevertheless as large as could reasonably have been expected, and the weakness of the strikers' position does not lie so much in their want of numbers as in their tactics and in the absence of support by other trade unions. An important federation, the "Independants," completely discountenanced the strike, whilst the Union of Free Workers, the independent activity of which indirectly was the cause of it, is now doing all it can to combat the movement. What is perhaps more important is the refusal of the masons to join the builders. Their co-operation was counted upon. Nettled by the limitations of their position, the strikers have engaged in many assaults on workpeople, and have largely added to their numbers—though naturally not proportionately to their force—by means of intimidation, in spite of police measures specially ordered by M. Caillaux. The action of the strike committee in declaring a strike at present is difficult to understand, for there has seldom been a time when more builders were without work. This is not so much because the building trade is weak as because during the last strike a very few months ago a large number of provincials came to Paris and found employment, at first temporarily, but soon permanently.

Two days later (July 12th) the Paris correspondent of the "Times" stated that there did not appear to be much change in the position of affairs. In the yards where men were working soldiers were still posted at the entrance, and strikers were still prowling round—especially in the outskirts of Paris—in order to entice or intimidate the workers. A serious scuffle occurred in the Rue de Vanves at 6 o'clock in the morning of July 12th, when some 30 roughs attacked the police who were conducting to the station strikers who had interfered with the liberty of labour. Sabotage, especially on the railways, where there have been several dastardly attempts at train-wrecking, has taken a rather more violent form during the last week or so; but, as M. Caillaux has stated, there have been 2,936 cases of sabotage of one sort or another during the period from last October till the present moment. Yet, incredible though it may sound, only two men have so far been brought to trial for railway sabotage.

The new Bill for the more effective suppression of sabotage was read on July 11th before the Commission on Judicial Reform, and unanimously approved. The measure is on the lines which were laid down by M. Briand when he was Prime Minister.

TRADE AND CRAFT.

British Firm's Foreign Expansion.

The Brilliant Sign Company (1907), Ltd. (registered offices, 38, Gray's Inn Road, London, W.C.), have recently increased their trade with the Continent so considerably that, in order to minimise the cost of production (saving duty, freightage, etc.), they have been compelled to build a factory at 58, Rempart du Lombard, Antwerp, where they have installed a large power press (costing over £400), as well as the latest labour-saving devices, including steel dies, etc., for the rapid production of the Brilliant Letter in fancy designs, and suitable for the Continental trade. The company's business abroad is extending so rapidly that it has become absolutely necessary to manufacture on the spot. The Continental factory will also give greater facilities for dealings in France, Belgium, Germany, etc., and, in fact, the whole of Continental Europe. The firm have arranged a partnership with a gentleman in Moss, Norway, for the development of their business throughout the whole of Scandinavia, and a stock of brilliant letters has been laid down in Norway. The firm are having catalogues printed in several foreign languages.

FEDERATION NEWS.

Midland Centre.

The half-yearly meetings of the Midland Centre were held at the St. James's Hotel, Derby, on July 6th. The Executive Council met in the morning and were subsequently entertained at lunch by the President and members of the Derby M.B. Association.

The President (Councillor J. Hardy Walker) took the chair at the half-yearly meeting of members in the afternoon, and there was a somewhat small attendance. The Secretary was instructed to attend the half-yearly meeting of the National Federation at Newcastle on July 26th. The name of Mr. G. H. Wright (secretary of Birmingham Association) was added to the year-book committee.

The half-yearly report stated that there was no material improvement in the building trade since the beginning of the year. The most serious difficulty with the operatives during the past six months had been with the builders' labourers at Nottingham, who struck work at the beginning of May, having declined to refer the dispute to arbitration or conciliation. Eventually the difficulty had been referred to a joint committee with an independent chairman. The latter gave his casting vote in favour of the operatives, who will now receive 7d. per hour—a higher rate of wage than that paid in any other part of the county with the exception of London and Wallasey, where the rate is the same. Disputes with the Nottingham and Leicester Carpenters and joiners and the Mansfield bricklayers had been dealt with by the Midland Centre Conciliation Board.

The new yearbook and directory was issued during the second week in March, and had proved of real value to the members. The profit on the venture was £14 6s. 4d.

The fifth annual conference of Midland Centre secretaries was held on March 9th. On the recommendation of the Collective Insurance Committee, the Executive Council had appointed Messrs. H. L. Riseley and Sons, of Bristol, as insurance brokers to the Centre, and had adopted a scheme which this firm had arranged with the Excess Insurance Co., Ltd. (underwritten by Lloyds), for the insurance of members against W.C.A. risks.

The North Staffordshire M.B. Association is now no longer affiliated to the Centre.

The report was approved and adopted.

Reference was made to the fact that the Nottingham Trades Council had issued a circular instructing the branch trades not to work with non-union labourers, and, consequently, to commit a breach of the Conciliation Board rules. The Nottingham employers were strongly urged to bring this matter before the various standing committees, and, if necessary, before the Conciliation Boards. A resolution was also passed calling the attention of local associations to No. 20 of the Centre rules, and requesting them particularly to note that copies of notices for alteration of working rules should be forwarded to the Centre secretary, and that no affiliated association should advance the rate of wages of the operatives above the rate of the Federated towns without the consent of the Centre Executive Council.

In view of the fact that the local associations had not expressed their opinions on the proposed alteration of basis of contributions to the National Federation, and the National Reserve Fund, it was decided to defer discussion on this matter until after the half-yearly meeting of the National Federation.

The meeting expressed its opinion that every possible effort should be made by the builders' organisations of the country to press upon the Government the necessity of adjourning the final passing of the proposed National Insurance Bill. It was decided to send a copy of the foregoing resolution, together with Mr. A. G. White's detailed objections to the Bill, to each of the local associations, and urgently to request them to hold immediately special meetings to consider the Bill, to formulate objections, and to forward same at once to their local members of Parliament and to the Centre secretary.

The suggested alterations to the National Federation rules (to allow for "Colonial membership") were approved.

The meeting approved of a suggested scheme for preferential trading if it can be carried through successfully on National lines, and the Administrative Committee of the National Federation were requested to arrange for a representative conference with members of the allied trades to consider the matter.

It was decided to hold the next annual meeting in Birmingham on Thursday, 11th January, 1912.—Fred. W. Amphlet, Secretary.

Nottingham.

New working rules agreed to with the carpenters and joiners came into force on July 1st. The standard rate of wages is to be 9½d. per hour. The working hours from March to November are to be 51½; from November to February, 41½; and from February to March, 44. The rules as to walking time and jobs at a distance are as follows:—

"Walking Time.—(a) That the starting points shall be 1½ miles radius from the Exchange, Market Place, except in the Bulwell direction, where, between and including Nottingham Road and Radford Road, there shall be 2 miles radius, and walking time shall be allowed from these starting points to the job at the rate of three miles per hour, the distance, when desired, to be ascertained jointly by the employer and employed.

"(b) Any employer shall have the right to convey the workmen at his own expense to any job between the 1½ and 4 miles radii in any way he may find advantageous, providing this does not involve the men leaving home earlier than they would have to do if they walked the whole distance. Work to commence as soon as the men arrive on the job.

"This rules does not apply to men set on at a job.

"Jobs at a Distance.—Any employer having a job beyond the 4 miles radius shall pay the workmen, if sent by the employer, their lodgings and railway fares both ways, or make an arrangement with the workmen as an equivalent."

The strike of bricklayers' labourers has now been settled by a joint committee consisting of six representatives of the employers and six representatives of the men, with an independent chairman, who had a casting vote, and new rules have been agreed upon. The wages are fixed at 7d. per hour all the year round, the hours being the same as for the carpenters and joiners. A half-penny an hour extra is to be paid for work on chimney shafts exceeding 50ft. from ground level, or on repairs to boiler seatings and flues, bakehouse ovens, or bridge foundations and culverts in water.

The effect of the new rules is explained in the report of the half-yearly meeting of the Midland Centre—See above.—W. J. Barton, Secretary.

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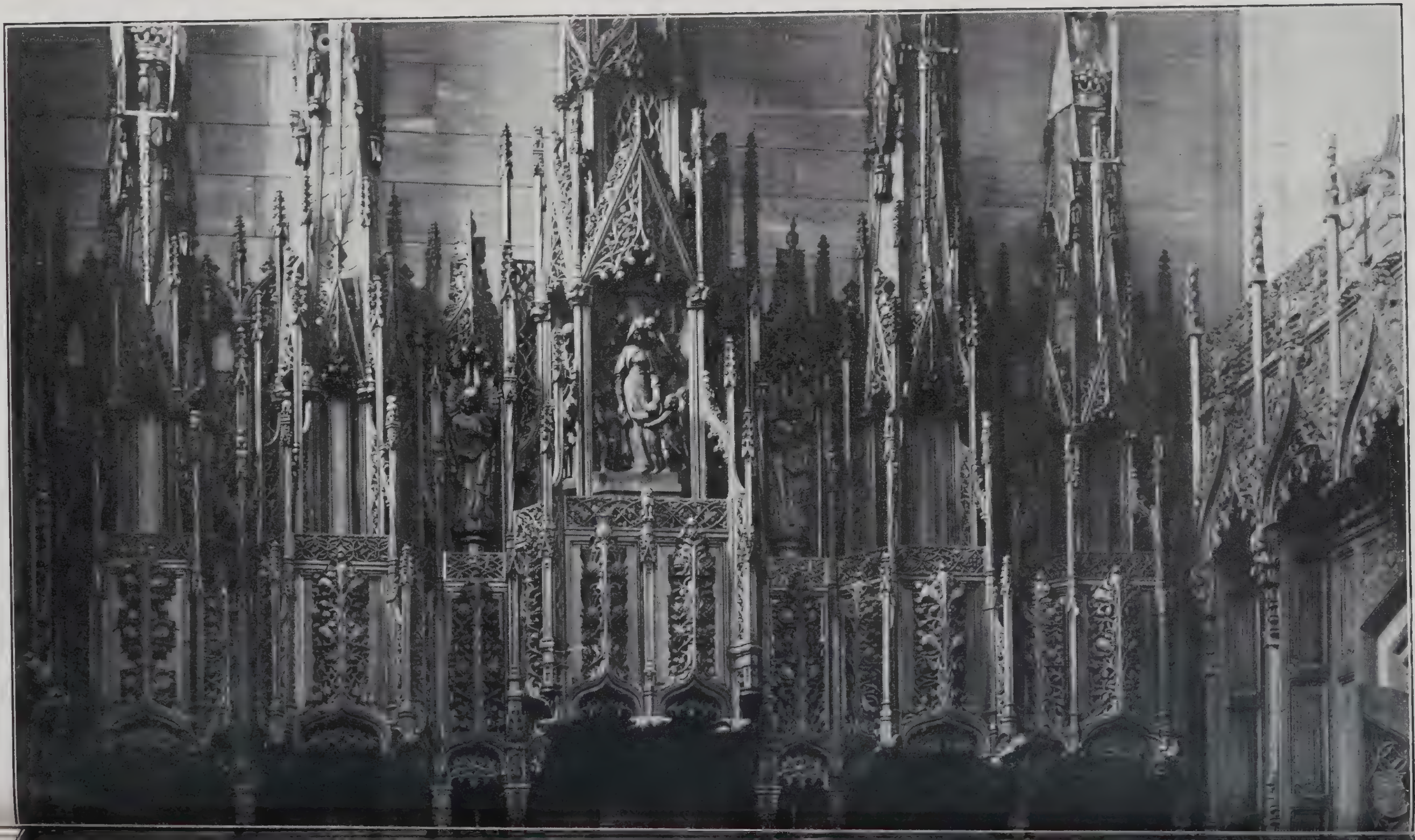

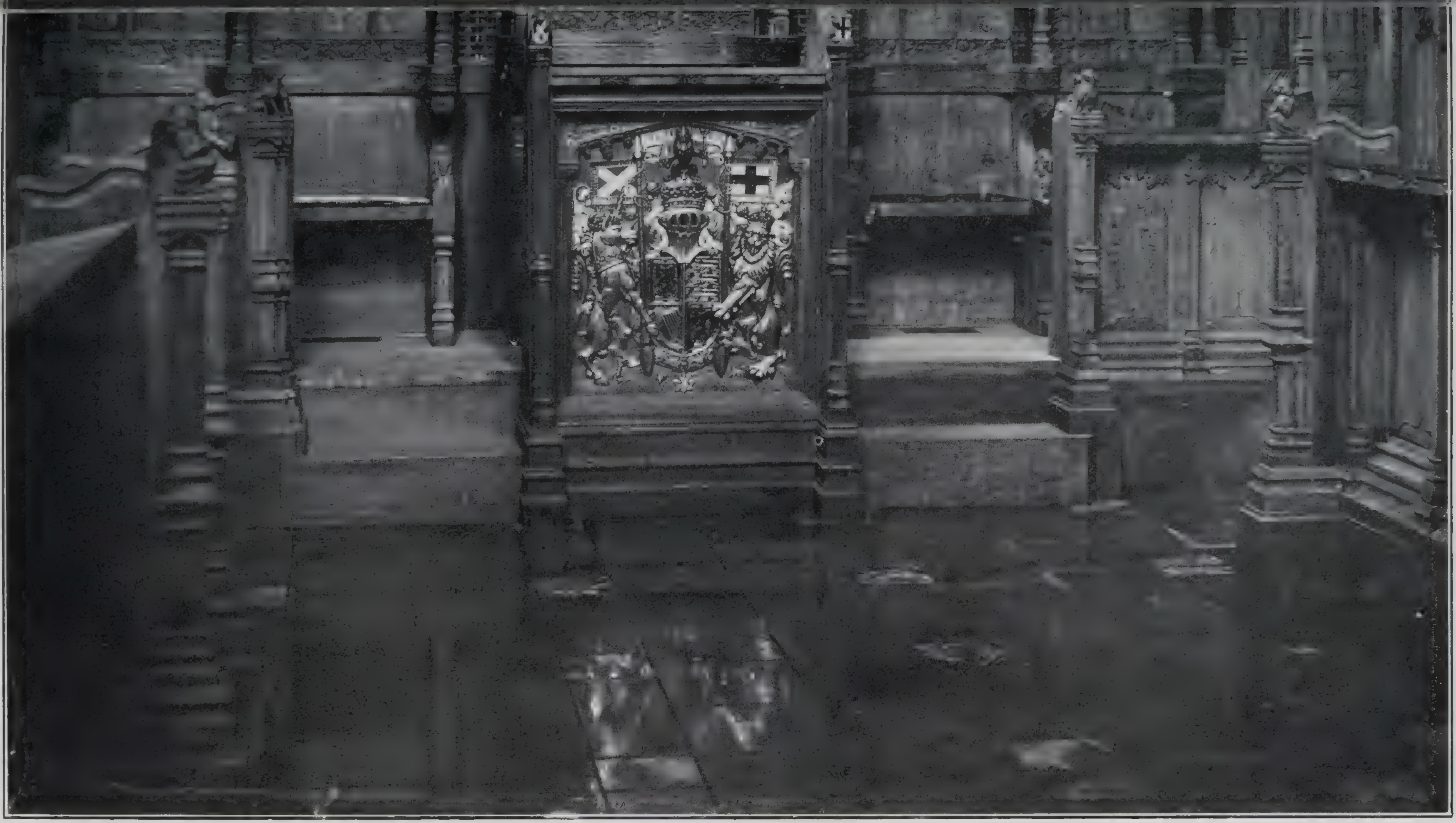

THE KING'S STALL IN THE CHAPEL OF THE KNIGHTS OF THE THISTLE, EDINBURGH. SIR R. S. LORIMER, A.R.S.A., F.R.I.B.A., ARCHITECT.

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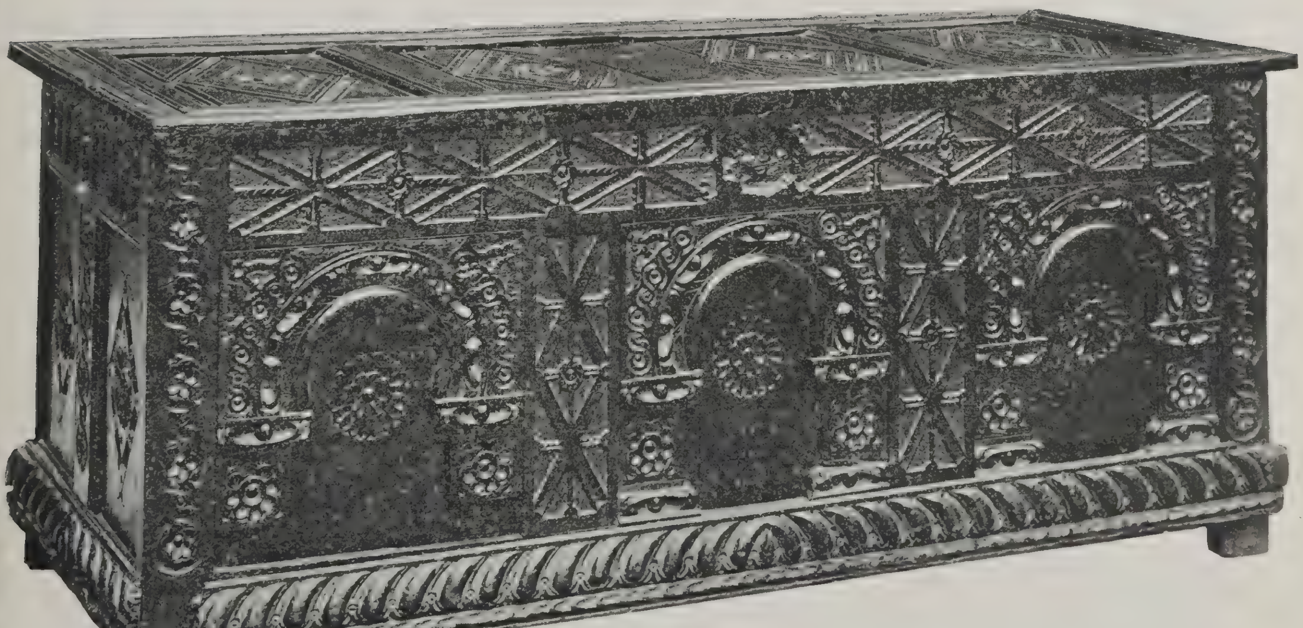
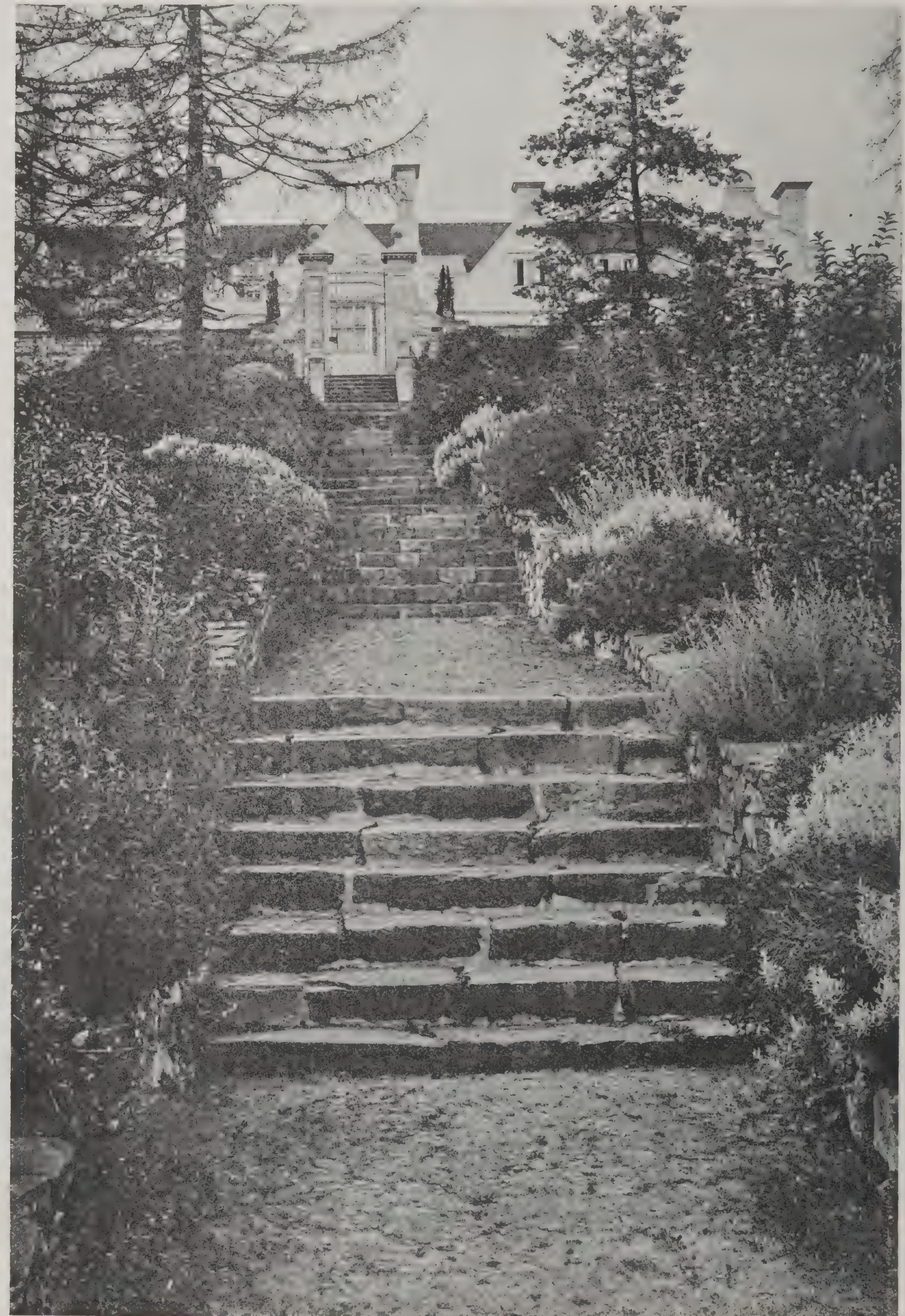


EARLY ELIZABETHAN CARVED OAK CHEST.

A typical example of the period.



STEPS LEADING TO "THE WILD GARDEN," WYCH CROSS PLACE, SUSSEX.
THOMAS H. MAWSON, HON. A.R.I.B.A., GARDEN ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

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NOTE: The List of Contents will be found on page IV. of the front advertisements.

Carved Ornament.

AN over-exuberance of carved ornament has been one of the great mistakes of the Victorian age of English architecture, especially in the case of London buildings, where stone carved ornament is so liable to get clogged and soot-laden, and to have its sharpness deteriorated by the action of weather. ndependently of this practical objection, it may be said that here is no more certain way of vulgarising a building than y bedizening it with a quantity of carving. It is the cheapest vay of getting what is supposed to be an effect; cheapest, at is, in regard to the thought bestowed on the design, though t costs a good deal of money in execution. But money exended without thought is the bane of architecture. Of late ears there is a much greater tendency to simplicity and everity in the use of ornament, and we seem to be arriving at he conviction that a little ornament carefully designed and ntroduced where it will have most effect is worth much more building than a profusion of carving.

The two great questions in regard to architectural carved rnament are, where it should be placed and what it should xpress, or (otherwise) what it should be founded on. With e Greeks, who were reticent in their use of carving, e principal use of it was in the capitals of columns. e are not considering their friezes of figure subcts; that is sculpture, not carving. With the Romans the arving was mainly in the capitals and the friezes; and the yzantine use of carving was much the same in principle, ough different in detail. They used the spandrels of an rcade largely for the introduction of carved ornament, and e Byzantine spandrel, like the Roman frieze, was an essenally non-structural space, fitted to be dealt with architecrally. It has been a tacitly understood principle in the ighest styles of architecture, that you do not carve members hich are an essential part of the structural lines of a buildg; to do so is to weaken them. Roman columns carved with ral ornament all over the surface do exist, in museums, but can hardly be doubted that they belonged to the decadence. anelled pilasters may be suitably carved, within the panels, d were treated so with great effect both by the Romans and e Renaissance Italians; but here the structural principle ain comes in; the facia and moulding round the panel comes, to the eye, the structural portion (as in woodwork it tually is); the panel part is a surface cut off from structure d protected, as it were, and hence becomes a proper field r ornament. That this is so is evident if we imagine an -panelled pilaster with the whole surface carved; it would once become a weak element in the architectural design. is perhaps a question whether stone pilasters ought to be ated as panelled, as it is really an imitation of wooden ucture; but the decorative treatment of the panel gives an parent reason for it.

The mediæval architects used carved ornament much on e same principles as the Romans and Byzantines—for pitals, running ornament, and spandrels; they introduced so two new uses of it; the crocket, which was to relieve the otherwise hard outline of gables and conical buttress terminations, and the carved boss in the vaulting, which was, to say truth, a rather lazy way of getting over the difficulty of making satisfactory mitre joints of various ribs meeting at different angles; a use of ornament to hide what might have been a defect in structural line. Many of these bosses are beautiful bits of carving, but they are a rather too palpable makeshift.

The unrestricted use of carved ornament, regardless of structure or obscuring it, is the mark of a more or less barbaric style, as in the Hindu buildings, which are carved all over, just as a savage carves the whole of his paddle, handle, blade, and all, without considering its practical use. The Taj-Mahal and other Mahommedan buildings in India may be cited in opposition to this idea; but, beautiful as these are, is it not a somewhat sensuous architecture in comparison with the severity of the Greek and of the best Roman architecture?

It is perhaps worth a question, why the capital of the column should be especially a feature to be treated with carving. In its structural origin the capital is a block placed on the column to give a wider bearing for the architrave; in the Doric style it is treated merely as such. Is the highly decorative treatment of the Corinthian capital really a natural or logical feature for that position? It is difficult to decide, for that capital has so imposed itself on architecture that it, or something like it, seems inevitable now; the mediæval carved capitals of the best period (those of France especially) are only variations on the Corinthian capital. If we had been used to see the decoration of a column concentrated at the base instead of at the top, would it, from habit, have seemed by this time to be equally natural and suitable? Perhaps, to adopt Shakspeare's phrase—"'Twere to consider too curiously, to consider so." But it is certainly worth consideration, whether we can do anything more with the forms of Classic capital than merely copy them. That brings one to the question, what is our carved ornament to consist of? We have the very simple repeating forms known as the egg-and-dart and the bead-and-reel enrichments, which are what may be called abstract ornament, consisting mainly in the elements of light and shade, repetition, and contrast. For anything higher than this it seems that we must go to natural foliage forms (the ornament of Nature) for a basis. The reason for not attempting realistic imitation of such forms is, first, that it is attempting the impossible; secondly, that in order to form an integral part of architecture, natural forms have to be architecturalised, as one may say, to bring them into harmony with the other details of architecture. In the foliage of the Corinthian capital the Greeks, and after them the Romans, did this with a success which has led to their carved foliage being taken as a model for all time. We may probably attribute the Corinthian capital to the Greek genius, although the most numerous and the finest examples are furnished by Roman architecture; for there can be little doubt that the Temple of Jupiter at Athens, which furnishes the earliest example of the Corinthian capital in its most typical form, was carried out by Greek artificers, though under Roman rule. The question for us in the present day to consider is, whether we have not rather indolently, in our classic buildings, been content with a mere repetition of the Classic capital, instead of attempting to impart something new into it of our own. Even in regard to the general form of the Classic capital, there are more suggestions of variety in Greek precedent than is generally recognised. The "Tower of the Winds" capital, often regarded as an exceptional design, was really a form a good deal used; various other examples have been found at Athens, and the capital from Patara, Fig. 1, is a slight variation of the same form, which is capable of a good deal of variety in detail, while preserving the same general idea. The Romanesque simplification of the leafage, as in Fig. 2, an eleventh century example at Brescia, in itself introduces a new character into the old form. There is certainly something to be attempted, even at this late day, in the way of evolving new character from the type of the Corinthian capital.

Regarded from the architectural point of view, the Byzantine type of leafage ornament, with its severe lines and the light and shadow effect produced by the V-shaped section of the interior surface of the leaf, leaving a fillet all round, is perhaps even superior to the Greek acanthus as a conventionalising of natural foliage. The first examples of this type of work are among the best architectural carved ornament ever produced; and as we have unfortunately to work much more often in stone than in marble, the Byzantine type has the advantage of being very well suited to stone-work. The Greek acanthus leaf is more a marble than a stone form.

In ornament based on natural forms it is essential that curves should be severely and clearly designed, with the curves always tangential in their junctions. Nature does not supply such curves, but Nature (except in crystals) does not work on geometrical lines; architecture does and must. All the curves in Greek carved ornament are of this description; take as an example the splendid bit of scroll ornament from the top of the Monument of Lysicrates, which is in every book on ornament. Mediæval work of the finest period, both in France and England, follows the same law, in its thicker lines and coarser material. The scroll foliage in the heads of the wall-arcades at Wells is quite Greek in its method. So also the Early English carved capitals, with their stiff-lined leafage springing out of the bell of the capital and forming part of it, are on the same principle as the Corinthian capital; leafage springing out of the capital, not applied to it. It was in the later period of Gothic that the foliage became more naturalistic and had the look of being applied round the capital instead of being a part of it. Unfortunately this later and inferior school received a great deal of admiration at the Gothic revival, and many bad and confused-looking leafage capitals have been produced in consequence. When Deane and Woodward's Oxford Museum was being built, which was supposed to represent the revival of true mediæval spirit, it was said that the carvers were to go forth into the fields and hedge-rows around in search of wild flowers of the district to be reproduced in the carved capitals. We doubt if those capitals interest anyone now. Architectural ornament is not to be produced by going out into the highways and hedges and compelling it to come in. The natural forms have to pass through a process of transmutation before they can become a part of architecture.

Among abstract forms of carved ornament which do not imitate Nature, there is something to be said for the spiral, which is a very interesting form with a kind of geometric mystery about it; we have never yet discovered how those beautifully executed spirals in the best Greek Ionic capitals were set out; the methods given in the books all break down in application. The spiral as a running ornament (largely used in archaic Greek work) has a very decorative effect; more so perhaps than the Greek fret or key-pattern, which is really the spiral in a square form. There may be possible variations, too, in the treatment of the Ionic capital, to which no reference has been made as yet. One curious example, given by de Vogüé from a Syrio-Byzantine building, is shown in Fig. 3.

If mere imitation of natural forms in carving is bad, imitation of artificial objects is still worse. That is the lowest deep in carved ornament; imitation of things not because they are beautiful or fit in themselves, but to show how cleverly the carver can do it. That is the vice of so much of Grinling Gibbons's work; splendid execution expended on things that are not worth it, and are not really decorative. And the "swag," as generally used in English Renaissance, comes nearly under the same condemnation. It is made up of things that may be said to be natural, but a bundle of them is not a thing worth carving. The pendent curve in the swag is the one thing that redeems it in a decorative sense. There is a certain effectiveness in some of the Byzantine capitals based on basket-work, but that is because of the contrast and interlacing of line involved, especially where dark interstices are left. The nearer it comes to looking like basket-work, the worse it is.

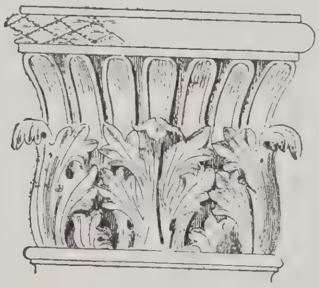


Fig. 1.

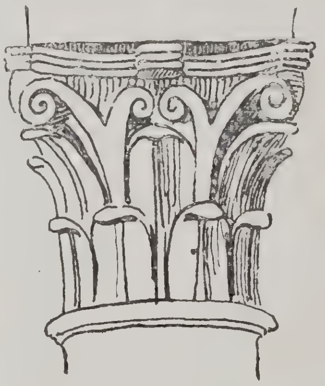


Fig. 2.

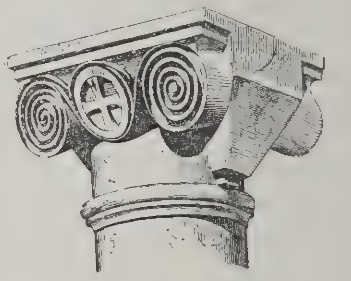


Fig. 3.

Can carved ornament be symbolical, or should symbolism be attempted? It is a difficult question. Symbolism adds to the interest of ornament, but objects that are symbolical are apt not to be decorative, though they may be decoratively arranged. Early Christian architecture was fortunate in being able to use for symbols the cross and the vine-leaf, both of them decorative in themselves. The grandest piece of carved symbolism on record is the Egyptian winged globe, but here the symbolism is so great and cosmical in its meaning that it overpowers all consideration of decorative effect, though it is by no means without that quality. The Roman frieze of ox-skulls and garlands symbolised the sacrifices, but has no meaning in a modern building. An analogous proceeding in the present day would be to decorate the frieze of a bank with an alternation of weighing scales with festoons of money-bags. In the great building for the Wesleyan Centre at Westminster, which in the main we admire very much, we should have thought that the carved ornament might have shown some symbolical reference to Wesleyanism as a Christian and spiritualising influence; we do not pretend to say ıow it could have been done. But what symbolism there is n the decoration seems to be rather Pagan than Christian.

The sum of the matter seems to be, that carved ornament hould be introduced on the exterior of a building with eserve and in positions in which it will make a special point n the design; that anything based on natural growths should e severely architecturalised in its decorative form; and that rnament does not consist in the mere carved imitation of ither natural or artificial objects—the latter least of all. ınd as a general rule (not without its exceptions) low-relief arving has a more refined effect, and blends better with rchitecture than high relief (still speaking of carved ornaıent only, be it remembered, not of sculpture). The important point of all is that it should harmonise with the general ıaracter of the building, and with the material in which it is orked; and in the present day it is perhaps hardly necessary say that it should be carefully considered and designed by ıe architect. Some little time ago there was a kind of aftsmanship craze about architecture, and the theory was t up that we should never have life-like carving on our ıildings unless the carver was left free to do his own work his own way. Very likely that was the case in mediæval ildings; but we are no longer in the Middle Ages, and condering that every bit of carved ornament should have a lation to the whole design, which it may either improve or jure, no architect who cares for his work as a whole will let y decorative detail slip out of his control. He may get od suggestions and improvements from a clever carver-- at is another matter; but it is for him to prescribe the aracter and design of every portion of carved detail on the ilding.

Two Exhibitions of Students' Drawings.

WO important exhibitions of architectural students' work were opened simultaneously last Friday; the annual exhibition of work by the students of the Architectural sociation at 18, Tufton Street, and that of the drawings l designs made by the students in the Department of Architure of the University of London, exhibited at University llege. The latter are on view till the end of this week; presume that the Architectural Association collection will o be on view for at least the same length of time, though special announcement is made on the card of invitation. was to be expected, the Tufton Street exhibition is much larger and more important, being that of a society existspecially for the study of architecture, while at Gower eet architectural study is only a department of general cation.

ıt the Architectural Association the first-year and secondr work (a selection of it) is hung in the Lecture Room. one end of the room are hung the drawings of the "Test" ject given at the end of the second year, to be worked out the class-rooms. The subject is a village hall. The d "village" used as a qualifying adjective to any kind of ding seems at present always to mean low walls and very roofs; this is mere matter of association; it might be well onsider whether the modern village might not assert its ıge character with a more modern and practical form of ing. The drawings hung round the other three walls v a great deal of excellent work, mainly consisting in the y of various styles of architecture, thrown in many cases the form of imaginary buildings to be carried out on ginary or on actual sites; "An entrance to a Greek Mari- Town," for instance, affords opportunity for an original osition in orthodox Greek detail; "A Roman Basilica for hester" (we should call it more properly "Romanesque"), "A domed vaulted memorial church for Leith Hill," d opportunities for designing in the Romanesque or ntine style as if for a definite commission on a definite a method which gives a certain practical interest to what d otherwise be a mere scholastic study. The series of drawings by Mr. D. J. Gordon, which, as the best work of any single student, occupy a considerable portion of the wall, are highly meritorious. Others of the miscellaneous collection are very good. Among them is a restoration of the Mausoleum (Mr. H. J. H. Dicksee) which is good as to the supposed general character of the monument, but does not account for the two different orders of steps; the filling in of the centre portion solid, behind the colonnade, is adopted in most restorations, but does not answer to the terms of Martial's description, "hanging in empty air," which rather suggests that the whole of the upper portion was supported on columns.

The more advanced studies, in the gallery, include studies of buildings in different styles, of the same kind as those already noticed, but also naturally include the higher stage of designs for modern buildings for special purposes. There are several designs for a Public Library, most of which are good in the exterior architectural treatment, that by Mr. Stevenson perhaps the best, but the plans are not very practical; it does not seem to be realised, for instance, that the Librarian's own room should be placed so as to give him the opportunity of keeping an eye on what goes on at the lending counter, and in the juveniles' reading room; one plan only, by Mr. Ford, provides for this; his exterior treatment is rather too severe; but this is more in keeping with the idea of a Library than some others which show quite a range of windows in front. Mr. Ford shows a pleasing design for a street fountain, with a statue on an octagonal marble stele with a bronze base.

The exhibition as a whole rather illustrates what we observed the other day as to the French system in which designs for practical buildings in a generally accepted school style form the important work, rather than designs in various known styles. The collection at Tufton Street seems to be directed too much to historical study, leading the student to think more of reproducing a past style than of producing modern architecture for a special purpose. We know very well that a great deal of the picturesque mediæval timber work is very unscientific, but why go to the trouble of making a drawing of a roof with a king-post standing on the centre of a massive tie beam, and with struts springing from it to the purlins, instead of a king-post in tension supporting the centre of the tie beam? It is quite mediæval, no doubt, but it is wretched construction, and it is not worth while making a drawing to illustrate the fact.

The most interesting part of the Gower Street exhibition is the series of drawings by Mr. Musmann, for part I. of the B.A. degree (Honours in Architecture), including studies in ancient styles, in construction, and in designs for modern buildings. The most important of the latter is a Town Club, with a fine plan, though it would appear that the dinners for the strangers' dining-room would have to come through the members' dining-room. Among the designs by other students for modern buildings the planning is rather naïve; in the various designs for a public library only one student, Mr. C. Voysey, realises that the Librarian requires a private study; his is the best of the Libraries both in plan and design. In the house plans the students do not seem to have realised the importance of aspect and of planning in reference to aspect; most of the plans ignore the compass point altogether; one student who does give a compass nevertheless plans his dining-room and drawing-room symmetrically with large windows both facing south, a most unsuitable arrangement. There is a clever plan of one house with wings placed at an oblique angle to the central block, which has merits, but the author would find that both his drawing-room and dining-room were rather deficient in light at the inner end. The architectural treatment of the exteriors is mostly exceedingly simple, and for students simplicity is much better than vagary in architecture; but the simplicity in the plans is of the wrong kind, and implies that the students need to give more attention to the elements of planning.

Mr. Mawson's Book on "Civic Art."

WE regret to learn that some remarks in our notice of this book have been construed in a manner which was furthest from our intention when publishing the review in our issue of July 12th; in particular, there has been an interpretation that the draughtsman and not the author of the book was responsible for the designs on which Mr. Atkinson's name appears. We are assured that, with two exceptions, this was certainly not the case; nor, in fact, did we intend to imply that Mr. Mawson had been under any necessity of relying on his draughtsman. On the contrary, we referred with special commendation to illustrations over the author's signature alone, as individual examples of design. It can hardly be denied that the book does owe a good deal of its charm to Mr. Atkinson's picturesque drawings, but as these represent the author's ideas, of course his position in relation to the draughtsman is quite a common one in the architectural profession.

With regard to the expression "landscape design," to which we took exception, we are glad to learn from Mr. Mawson himself that he was not responsible for the title attached to the Chair so named. He has, in fact, consistently opposed "landscape design" in the course of his extensive experience as a garden architect and civic planner; for we need hardly remind readers that Mr. Mawson has carried out a very large number of important schemes. We hold that while "garden design" is a legitimate and an important art, "landscape design" is an illusion—a thing which does not exist, except for the very object of producing illusions, which is bad art.

St. Paul's Bridge.

WE may congratulate Messrs. Leeming and Leeming on having put in a word of common sense, in a letter in the *Times* of the 18th, in regard to one point at least in the St. Paul's Bridge controversy. In regard to the danger to St. Paul's from the tramway subway, which they endeavour to minimise on the basis of their own experience in connection with the old Admiralty building, we do not agree with them; the circumstances of site are not the same, and the danger to St. Paul's from the subway is far too great a risk to be worth running. But when they ridicule the idea that a skew bridge would necessarily have to be of steel, and say that such an objection "ought never to have been raised in these days of reinforced concrete construction," they are speaking plain common sense, which may be recommended to the consideration of the architects who drew up the Report and represented a skew bridge as presenting great difficulties of construction.

The King Edward VII. Memorial.

THE decision of the Committee to erect the memorial statue to the late King at the Piccadilly end of the new Broad Walk in the Green Park will probably be generally accepted as a fairly satisfactory settlement of the question. There is no particular objection to it, but that is about all that can be said; it is not an ideal position, because the monument will stand at right angles to a principal thoroughfare instead of having a great line of street leading up to it; and though in a sense it will be axial with the Victoria Memorial, it will be with the cross axis and not with the main axis of the latter erection. A far better and more effective position would have been to place it in the middle of the Mall road, at the east end, facing the Victoria Memorial, and with the new Admiralty building as its background. The objection made to this was that it would occupy too much space in the roadway, but the road is so wide that there is plenty of room in the centre for a dignified pedestal and statue. However, a site has been selected which is not likely to arouse any important objection, and after so much controversy it is well to find the matter settled at last.

Winchester Cathedral.

YET another public appeal is being made for the amount required to carry out the last stage in the work of securing Winchester Cathedral from the ruin which threatened it. The task which has confronted the Dean and Chapter for the last six years is a very formidable one—no less than to underpin throughout the walls of the longest Gothic building in the world. That work has now been almost completed, with the exception of the south aisle of the nave, at a cost of £100,000, raised in the main by small contributions. From the outset they have had to contend with one serious drawback. The work is almost entirely underground, and does not appeal to that numerous class of people who like to see something for their money. But this drawback no longer exists. In the case of the south aisle wall, which was perilously weakened by the removal of the cloister in the sixteenth century, it is necessary not only to underpin but to build ten buttresses. The cost of this work will be £10,500, and for this sum an appeal is now made. As it would not be safe to leave this one wall even for a short time without secure foundations when the whole of the rest of the church has been underpinned, the authorities have had no choice but to sign the contract for the work, and, as the appeal says, in fine homely phrase, "to trust that the English people will not leave us in the lurch." One form which help may take is the gift of buttresses. The cost of each is £576. One has been already promised, and it is hoped that individuals or families or towns will contribute others, which may, if it be desired, bear an inscription recording the name of the donor. There has been also received from a churchman in the diocese, who has already given £1,000, the promise of a similar amount on condition that the rest of the money required be contributed before the end of this year. The appeal, which is signed by Dean Furneaux, concludes: "We ought not to appeal in vain to the patriotism and generosity of English people, when the church for which we plead is, alike in beauty and in wealth of association, one of the noblest in Christendom."

The Paris Building Strike.

THE strike in the Paris building trade was happily not of long duration. The men returned to work on July 20th, after being out for ten days on the demands for a nine-hours day and the abolition of piecework. It was never more than a half-hearted strike, the majority of the men feeling that, if the demands were not preposterous, at all events the time was unpropitious, trade in the city being just now uncommonly slack. Moreover, any chance that the men may have had at the outset—they have gone back without getting either of their points conceded—were completely ruined by the brutal and cowardly acts of *sabotage* with which, rightly or wrongly, the strike was associated in the public mind. Attempts to wreck trains fill with horror and disgust not only the minds of the general public, but also those of all the sane and respectable workmen, who have, if possible, even more reason to deplore such maniacal outrages than have those who, while their lives, limbs, and property may be endangered, have no cause imperilled. *Sabotage* and other forms of terrorism and tyranny having failed miserably of every effect save that of branding a whole class with an infamy that, for the sake of humanity, one is willing to believe to be in the majority of cases wholly undeserved, we may hope that at least the impolicy of criminal violence has been effectually and conclusively demonstrated. The pity and shame of it is that such a conclusion should have been reached experimentally.

Sir R. S. Lorimer.

THE architectural profession, we are sure, will have read with great satisfaction that the honour of knighthood has been conferred on Mr. R. S. Lorimer, for no chitect in this country has a greater claim to such distinction. he immediate occasion was the opening by His Majesty of e Chapel of the Knights of the Thistle in Edinburgh on ednesday last; but, brilliant as this work is, the architect as a long series of equally fine, and even finer, buildings to s credit; and it is on this account that one is glad to see his lent thus recognised. Sir R. S. Lorimer is a son of the te Professor Lorimer, of Edinburgh. He was born in 1864, nd was educated at the Edinburgh Academy and the Edinurgh University. He entered the office of Sir Rowand nderson as a pupil in 1885, and served with that architect r four and a half years. After travelling in England, he ntered the office of the late Mr. Bodley, R.A., where he had uch experience of ecclesiastical work and the decorative side architecture generally. Mr. Lorimer was with Mr. Bodley

SIR R. S. LORIMER, A.R.S.A., F.R.I.B.A.

r a year and a half. Since he returned to Edinburgh he s been engaged largely on country houses and restoration rk, including the restoration of Earlshall and uchars, the designing of a large house in Argyllshire—dkinglas—for Sir Andrew Noble, Bart.; the restoration of a mediæval castle in Kent for Mr. F. J. Tennant; and the toration of Dunderawe Castle for Sir Andrew Noble. Mr. rimer restored The Glen and Monzie Castle after their truction by fire, and in the Royal Scottish Academy's ibition this year he is represented by drawings of Rowal-, a castellated mansion in Ayrshire, which he has designed Lord Rowallan. He was elected an Associate of the Ryal Scottish Academy in March, 1903. A tremendous ker, and an artist in every fibre, he was predestined to a inguished career in a profession in which this combination ssential to brilliant success.

National Memorials and the Competition System.

ARCHITECTURAL competitions do not seem to find much favour with the committees or other bodies entrusted with the power to spend money on public monuments. Following precedent, the Executive Committee of the King Edward Memorial Fund have resolved not to submit to public competition the commission for the West End memorial, but to invite Mr. Bertram Mackennal, A.R.A., as sculptor, and Mr. E. L. Lutyens as architect, to prepare and submit to the Committee plans and designs for a statue of King Edward to be placed at the Piccadilly end of the Broad Walk in the Green Park. Both names inspire the utmost confidence that superb work in both kinds will result; but it does not follow that the principle of arbitrary selection in thereby justified. Good as the monument will doubtless be, it might have been possible to get a better if the monument had been thrown open to competition. Upon the general question of competitions, and without reference to any particular public work, or to any particular competition, it may be useful to discuss a few salient points. The topic is of perennial interest, and the arrangements for the execution of an important national monument seem to afford a legitimate occasion for regarding once again some of the pros and cons from a detached and therefore an impartial point of view. The question, as a whole, is one in which arbitrary pronouncement of absolute judgment for or against would be unwarrantable upon a fair and judicial review of the experience of competitions and of the arguments deducible therefrom; and on the whole we are inclined to believe that particular circumstances must decide whether or not the system is justified. The evils of competitions have been exhaustively pointed out in these columns. Nevertheless, it has always been admitted that, in spite of their wastefulness of time and energy, and notwithstanding the many other drawbacks that are only too evidently inherent in the system, open competition has the great redeeming merit of revealing talent that might otherwise remain obscure and sterile, and of thus advancing the development not only of the individual artist but of the whole art. Then, again, while a commission may be an inspiring thing, it may conceivably afford less stimulus than the effort to obtain not only a commission but perhaps name and fame. Which system affords the larger promise of boldness and originality? The commissioned artist is to some degree in the same position as those who are conjured to "Pray Heaven our greatness may not fail through craven fear of being great." Being at the summit of his fame, he may grow dizzy with the terror of toppling over; or he may not; for it is a question of temperament. But is he not, as a rule, rather more likely to "play for safety"—to adhere closely to the conditions of previous success—rather than to risk his reputation by daring to do something which is different in degree, if not in kind, from what he feels to be expected from him by those who have commissioned him on their knowledge of his past achievements? These general considerations have, of course, no personal bearing on the appointment of Mr. Mackennal and Mr. Lutyens, of whom it may be said without flattery that they are both artists of such strong individuality that they will be easily able to rise superior to the temptations that might well assail weaker men. They form, indeed, an almost ideal combination; and as both are comparatively young, it is probable that neither has yet reached the zenith of achievement, and that the King Edward Memorial will give them the opportunity of transcending themselves. Nevertheless, we could have wished that the work had been thrown open to competition. But perhaps the consideration that weighed with the Committee in deciding upon the course they have taken was one that in fairness must be mentioned, and that is, that some few men of established reputation are apt to refrain from taking part in competitions. This, again, is partly a question of temperament; for it is notorious that men of the highest standing, who certainly have no lack of commissions, do occasionally try their luck in competitions.

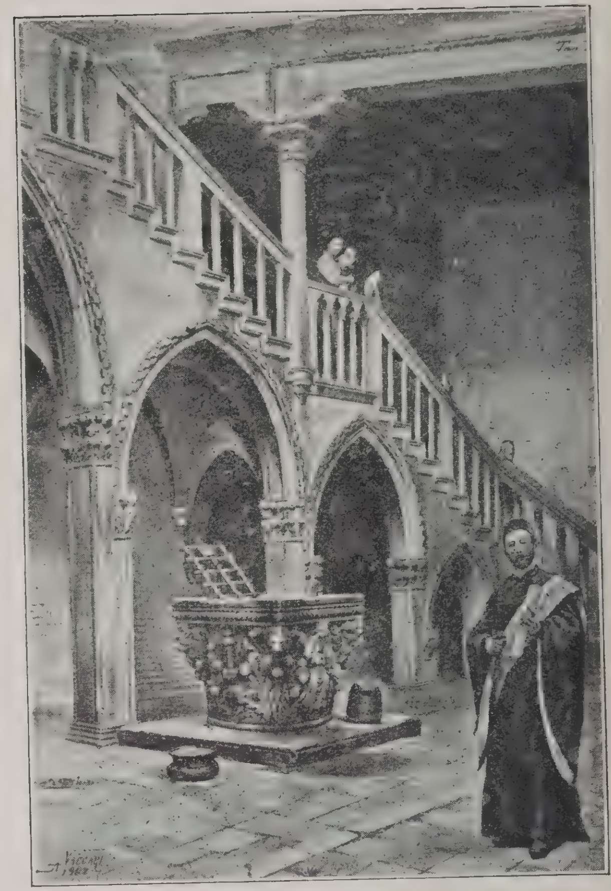
THE MOROSINI PALACE, VENICE.

THERE is no more famous house in Venice than the Morosini Palace, and none more worthy of celebrity. In the sixteenth century it was the centre and focus of the intellectual life of the Republic of Venice. It is also in itself, apart from its historical associations, an extremely interesting building; but unfortunately the courtyard, through which there has been acquired a public right of way, has consequently, so far as appearance counts, lost most of its former glory.

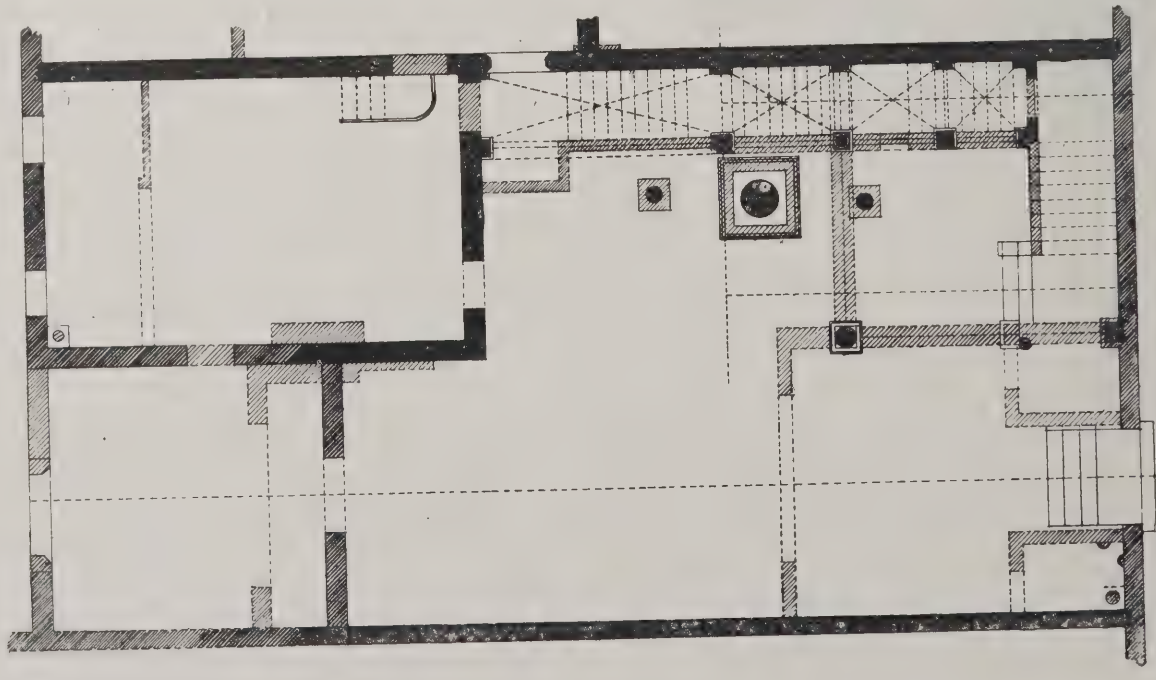
The deplorable neglect into which the buildings had fallen excited the compassion of Professor Aristide Naccari, who is not only an accomplished architect but a zealous guardian of the architectural monuments of his city. With great care, and after much research, he prepared and presented a project for restoration. Existing features of the building of course afforded invaluable guidance and suggestion; but Professor Naccari very diligently examined and compared all the accessible buildings of contemporary date, as well as all the available documents bearing upon the problem.

As to the evidences afforded by the building itself, much was to be observed or inferred from, for instance, the embattled wall, the contour of the courtyard, the details of an original window, and the acroteria of the doorway above the staircase. With these and other aids, not forgetting the intuitions of an architect who is delicately sensitive and sympathetic to influences of this kind, it has been possible to reconstruct the work with a reasonable probability of close fidelity.

The illustrations show respectively the present state of the building and the project for its restoration. From the first of these it will be seen that the present condition of the courtyard is nothing less than deplorable, and the vicissitudes it has suffered are almost painfully evident from the project for restoration, which represents the original state of the building in the fourteenth to fifteenth centuries. The sections afford a fairly clear idea of the construction. In the plan of the courtyard, the parts blacked in indicate the remains of the original work, the hatched parts showing the successive alterations and additions at various dates. The perspective study of the stairs as they would appear when freed from the excrescences seen in the present-day view is a convincing evidence of the restorer's scholarship and feeling, as well as of the desirability of effecting the proposed rescue from the effects of vandalism and neglect—vices to which, it would appear from this and from too many other examples, the Italians, with all their fine heritage of noble traditions and splendid buildings, are hardly less free than the peoples of less favoured countries.

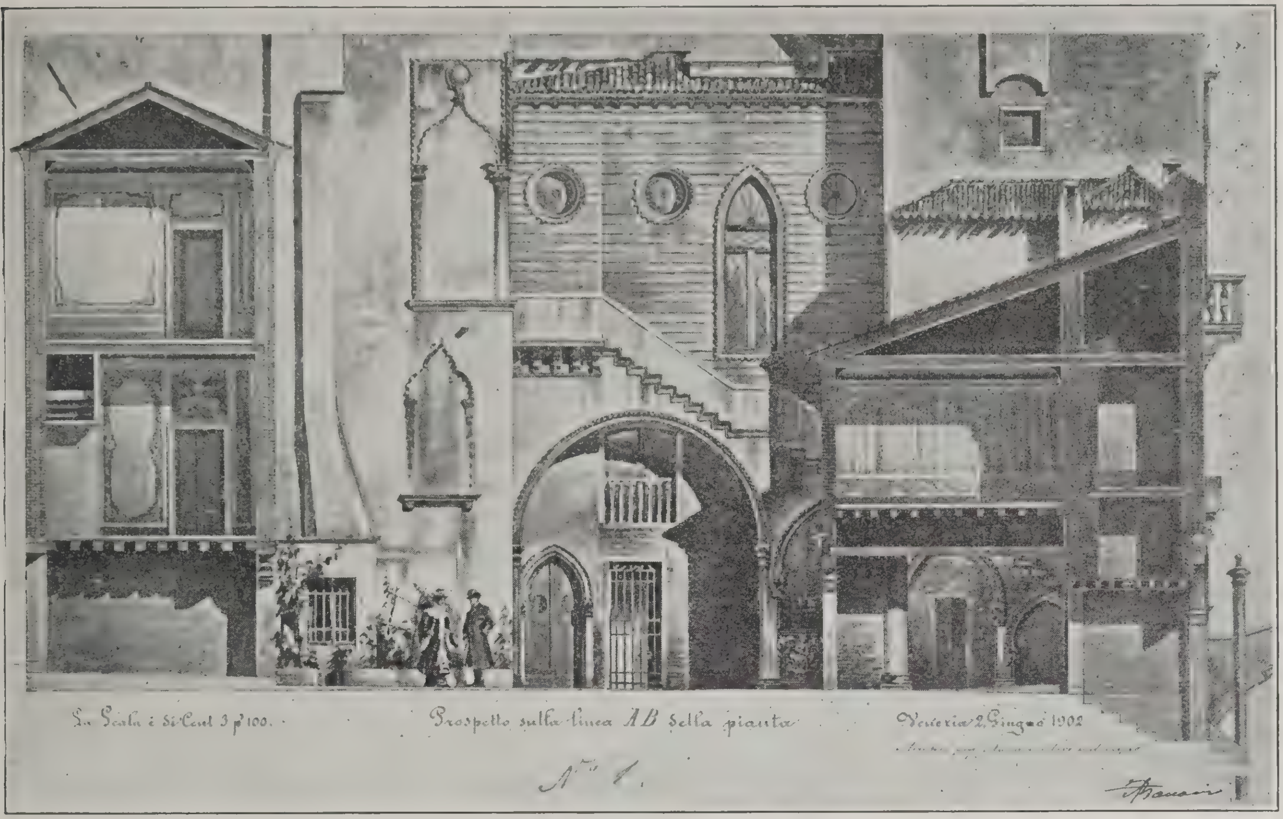


VIEW OF STAIRS.

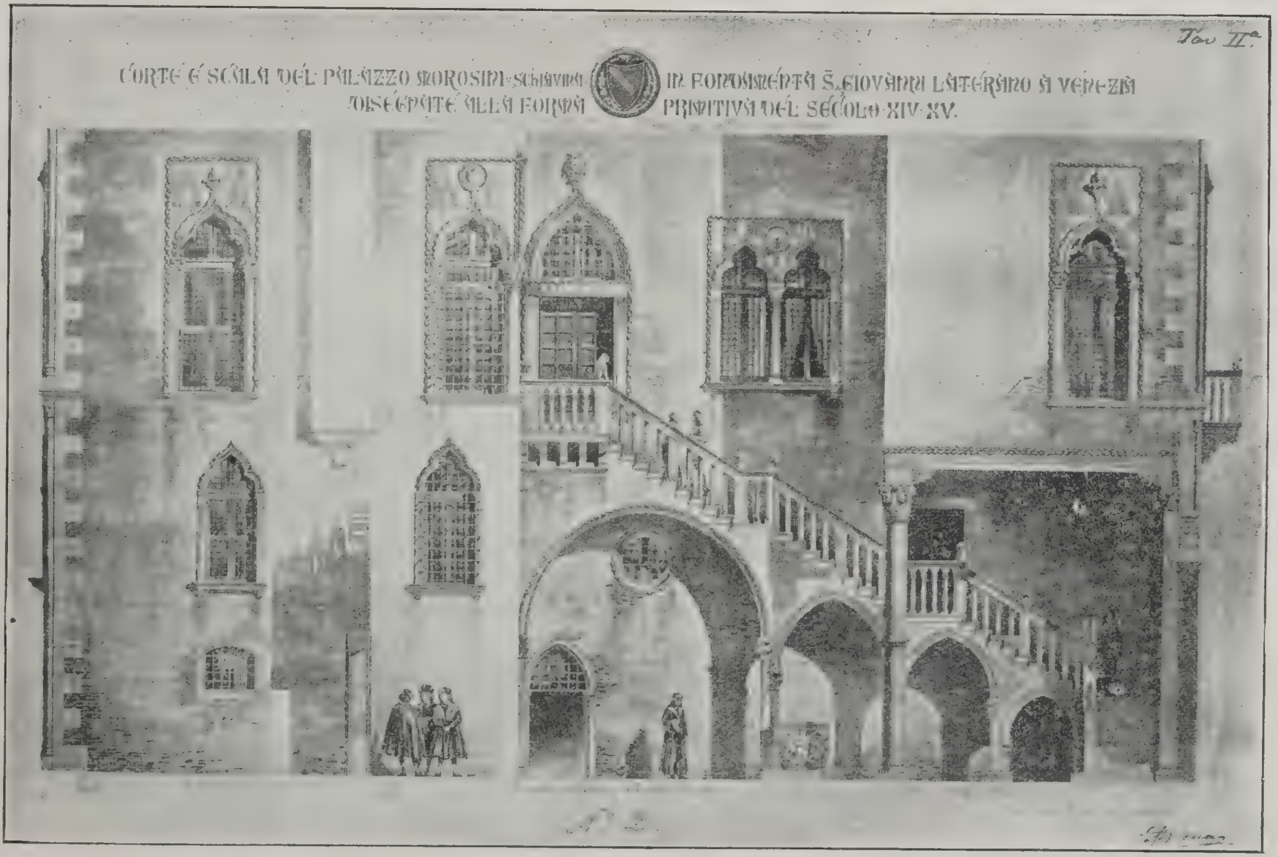


Remains of original work shown solid; succeeding alterations and changes shown hatched.

PLAN OF THE COURTYARD OF THE MOROSINI PALACE, VENICE.


La Scala è di Cent 3 p' 100.
Prospetto sulla linea AB della pianta
Venezia 2 Giugno 1902
N° 1.

Present Condition.


Tav II.a
CORTE E SCALA DEL PALAZZO MOROSINI-SCHIAVINA IN FONDAMENTA S. GIOVANNI LATERANO A VENEZIA
DISEGNATE ALLA FORMA PRIMITIVA DEL SECOLO XIV-XV.
N° 2.

Proposed Restoration to Original Condition in Fifteenth Century.

THE COURTYARD OF THE MOROSINI PALACE, VENICE.

THE ANNALS OF BRIDGE BUILDING.

History of Bridge Engineering. By Henry Grattan Tyrrell. Published by the Author, Chicago.

The first traces of bridge construction are naturally found in Assyria and Egypt. The Assyrians had rather elaborate systems of canals, and possibly these were crossed by bridges. If about 4,000 B.C. the citizens of Nineveh and Babylon knew how to construct brick arched sewers, it is probable that at a very early date they had sufficient constructive skill to connect the banks of a stream with something less primitive than logs of wood. It is gravely conjectured that, in the days of Nimrod (2,200 B.C.) the Euphrates, where it flowed through Babylon, was spanned by a single arch of brick: "it must have been made of brick, as that was the only building material of Babylon"—a naïve inference which does not receive much support from Mr. Tyrrell's next paragraph, in which he says that "the earliest record of a wooden bridge is given by Herodotus (484 B.C.), describing one built 783 B.C. over the Euphrates River in Babylon during the reign of Nitocris. . . The bridge had stone piers connected with wooden platforms, which were removed at night to prevent thieves from entering the city. Its width was 35 ft. and length 660 ft." There is, of course, no trace of this bridge, but the tradition of it has a greater air of probability than the single arch of brick that is assumed to have preceded it by some fifteen hundred years.

Some Very Old Bridges.

Coming to bridges of which remains exist, the Caravan Bridge over the Meles, at Smyrna, is no doubt one of the oldest in existence. It is of single span, as the width of the river does not exceed 40 ft. It is presumed that the builders of the Pyramids must have been well able to build bridges; and very primitive brick arches, possibly dating back to about 2,900 B.C., have been found at Thebes, on the Nile. The bridges of ancient Greece may have had heavy piers and abutments connected with wooden planks, like that of Eubœa (425 B.C.); or like that at Assos, may have had stone lintels dowelled together on stone piers. Later bridges had the upper corners of stone overhanging so as, meeting in the centre of the span, to form a false triangular arch (as at Metaxidi, Sparta, and Messenia), of which the semicircular arch afterwards used by the Romans is perhaps the immediate development.

A very old bridge in Persia, that at Dizful, in the province of Khuzistan, which perhaps belongs to the fourth century A.D., but is by some imaginative persons supposed to be about 800 years older, is still in a very fair state of preservation, and has twenty pointed arches, 23 ft. long, between piers 29 ft. thick. This, and a similar bridge at Chouster, lead our author to the light-hearted suggestion that the Gothic or pointed arch may have originated in Persia. Possibly; but it is so easy to juggle with uncertain dates and disputed precedence. Nor would it be very surprising to find that the Chinese were using both slab and arch construction 2,000 years B.C. Mr. Tyrrell raises no doubt upon these points, and it would be useless to disturb his complacency.

"O Tiber, Father Tiber!"

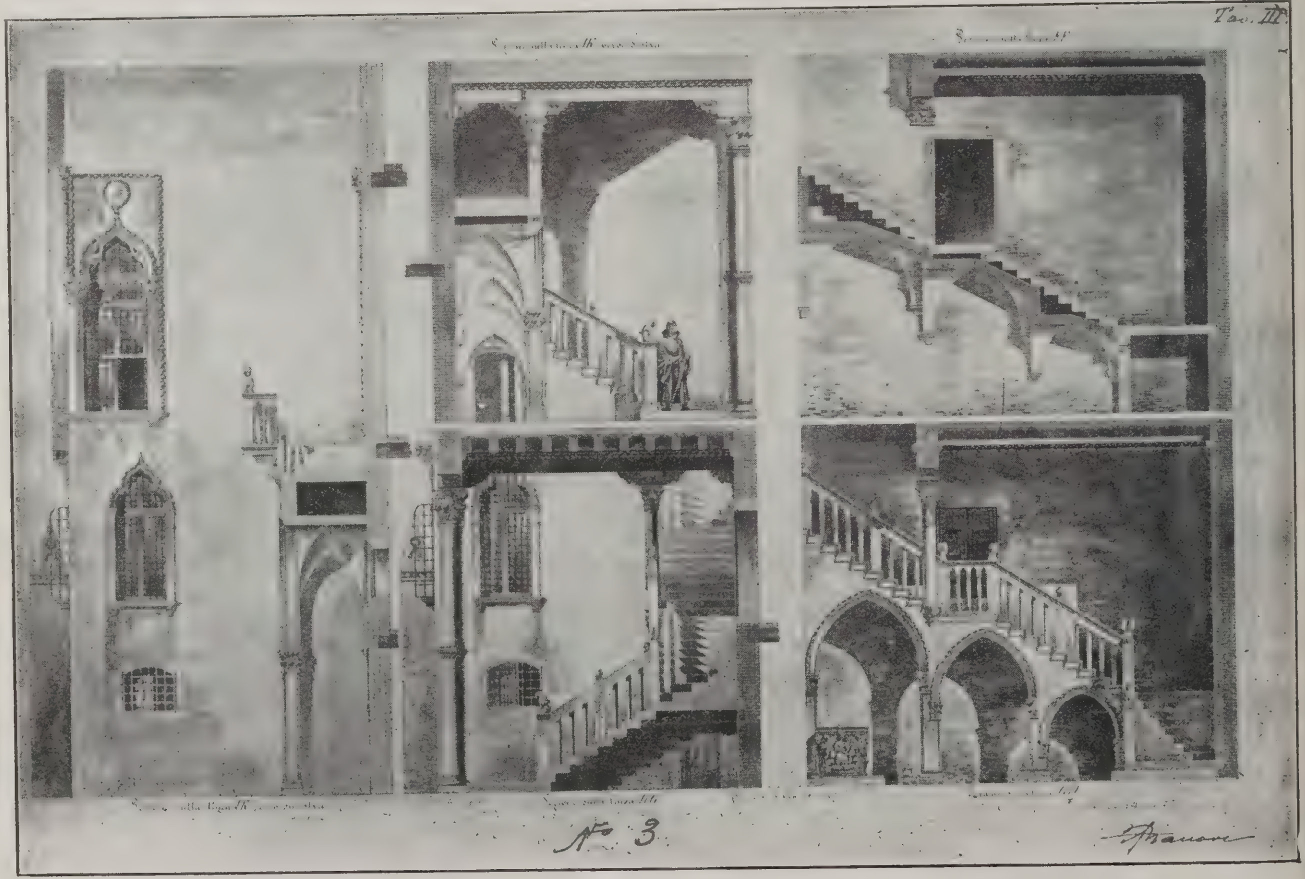
The Romans knew how to build bridges for endurance if not for beauty. "The Tiber has experienced at least thirty disastrous floods, and the wonder is that any bridges remain. They were designed without much theoretical knowledge of their stresses, and were proportioned by judgment or empirical rules, but they show great merit both in design and construction, and have hardly been excelled. The arch stones were often so carefully fitted that they appear to have been ground together; and in the joints mortar was not generally used, but the stones were united with iron clamps." Then comes an observation that will bring but cold comfort to the modern contractor: "It is said that Roman builders were required to make repairs on their bridges and keep them in good condition for a period of forty years, and the final payments were withheld till after that time." It would thence appear that the factory owners of the North of England have not yet quite caught them up.

The Appearance of the Arch.

It was, says Mr. Tyrrell, during the fifth and fourth centuries B.C. that the semicircular true arch began to appear. In Greece the true arch existed in tombs and domes as far back as 450 B.C., but was not used for bridges until later. "The city of Athens was adorned with splendid buildings, but there is no trace or evidence of bridges, and"—the author is surely without an equal in the swiftness with which he pounces on the slightest opportunity for drawing a superfluous inference—"the river Cephisus must have been crossed by wading." For aught he can prove to the contrary, it may have been crossed on aeroplanes. The materials in Roman arches were usually tufa, peperino, and travertine, with a filling of pozzuolana cement. Tufa is a mixture of volcanic ash and sand; peperino, a conglomerate of ash, gravel, limestone, and broken lava; travertine, a creamy white limestone of great durability when laid on its natural bed; pozzuolana, a reddish earth from Pozzuolina, near Naples, and found also at Rome, and pulverized and mixed with lime to form hydraulic cement.

Old Roman Bridges.

The eight famous old bridges of Rome—Sublicius (621 B.C.), Aemilius (187 B.C.), Milvius (100 B.C.), Fabricius (62 B.C.), Cestius (46 B.C.), Aelius (136 A.D.), Janicu-



THE COURTYARD OF THE MOROSINI PALACE, VENICE: SECTIONS SHOWING CONSTRUCTION.

anus (260 A.D.), and Triumphalis or Vatianus are described in the book at perhaps reater length than their importance demands; and in mentioning the Sublicius here is the inevitable reference to "How well Horatius kept the bridge in the brave days of old," with the added information that as the word 'Sublicius' means piles, it is enerally believed to have been of hewn imber, supported on piles, and neither nails nor iron of any kind to offend the iver-gods were used in its construction." The folk-lore is more welcome than the mistranslation, which is rather characterstic of the author's habit of swift and uperfluous deduction.

Mediæval Bridges.

Mediæval bridges (500-1500 A.D.) form he subject of an interesting chapter, in which the illustrations are better than the ext. The semicircular arch prevailed until he thirteenth century, when pointed arches were more in fashion, while in the foureenth century elliptical and segmental orms were more commonly adopted. From he twelfth to the fifteenth centuries, the bridges built were generally mean and heap, narrow, steeply graded, and frequently with unequal spans. The religious rder known as the Brothers of the Bridge ppears to have been founded in the twelfth entury by the Benedictines, who took pon themselves the duty of preserving the bridges, and of establishing upon them ouses for the protection of travellers gainst robbers. Hence arose the stillxistent ecclesiastical title of Pontifex Maximus. The mediæval bridges of all ountries being passed in review, those of hat period in Britain are included. The rimitive stone bridge over the East Dart is thought to date back some 2,000 years. The Croyland bridge, that strange tringular structure whose curious form has iven rise to so much ingenious conjecure, and whose abutments are in three ifferent counties, was perhaps first built n the ninth century, although the present tructure is thought to have been built n 1380.

London Bridge.

The earliest precursor of London Bridge may have existed in A.D. 978; but there is ess dubiety about the bridge of 1014, which was partly destroyed by fire in 1136. The often-depicted wooden bridge with ouses and shops on it, and a gateway dorned with the heads of malefactors, is aid to have been begun in 1176 by Peter f Colechurch, who was perhaps one of he Brothers of the Bridge, but was not ompleted until 1209. Three years afterards, fire broke out at the southern end. rowds of spectators were huddled on the ridge, when another fire broke out at the ther end. The people were thus packed etween two fires, and about 3,000 of them ere burned to death or drowned. In the treet between the two rows of houses, the orces of Jack Cade were defeated by the itizens in May, 1450.

The Department of Bridges and Roads.

With the Renaissance period the bridge uilders became very active, especially in rance, where, in 1715, the famous Department of Bridges and Roads was created, nd, under Perronet, the subject thenceorward was treated scientifically. In Britain, the names of Milne, Smeaton, he Rennies, Telford, the Stephensons, and he Brunels, stand for an enormous development in bridge-building, which was reatly increased by the rise of the railays, especially during the period 1830-50. he earliest of the more important railway iaducts is said to be that at Maidenhead 837).

Great Thames Bridges.

Of existing bridges over the Thames, a few particulars may be recalled with interest now that, in connection with the St. Paul's Bridge scheme, the subject has become a burning topic. *London Bridge*, 928 ft. long, originally 54 ft. wide, increased in 1901 by corbelling out to 65 ft.; five semi-elliptical arches—centre arch 152 ft. span, rising 29 ft. 6 in. above high-water mark; two arches next centre, 140 ft., 27 ft. 6 in. high; two abutment arches 130 ft., 24 ft. 6 in. high; material, granite; built by John Rennie and his two sons; first stone laid June 15th, 1825; opened August 1st, 1831; cost £2,566,268. *South-Eastern Railway Bridge* (Cannon Street), iron; five arches, two 135 ft.; three 167 ft., resting on 16 cylinder piers. *Southwark*, 708 ft. long; three cast-iron arches; centre span 402 ft.; built by Rennie; first stone laid April 23, 1815; opened 1819; cost about £800,000. *Blackfriars*, iron, on granite piers; five arches, composed of nine parallel ribs of wrought-iron; 1,272 ft. long, including abutments; central arch, 18 ft. span; cost, £320,000; built 1864-9, by William Cubitt; width increased, 1907-9, from 43 ft. to 73 ft. by Sir Benjamin Baker and Mr. Basil Mott. The hideous lattice bridge of the London, Chatham and Dover Railway beside it is 1,040 ft. long, 55 ft. wide; central span, 202 ft. *Waterloo Bridge* ("perhaps the noblest bridge in the world"), 9 elliptical arches, 120 ft. span, 35 ft. high, on piers 20 ft. wide at springing; 1,380 ft. long, 43 ft. wide; land arches to the Strand, 766 ft.; first stone laid, 1811; opened, June 18th, 1817; cost, more than a million sterling; engineer, John Rennie; architect, George Dodd. *Charing Cross Bridge* (S.E. and C.R.), iron lattice resting on six cylinder and two brick piers, 8 spans 70ft. wide; built 1863 by Hawkshaw. *Westminster*, 7 iron arches resting on stone piers; length, 1,160 ft.; centre arch, 120 ft. span; built by Page, 1856-62; cost, £216,000. *Vauxhall*, length 759 ft. 4 ins.; with, 80 ft.; centre span, 149 ft. 7 ins., with headway of 20 ft. above high water; five arches—two intermediate spans each 144 ft. 4¾ ins., with headways of 19 ft.; two shore spans, each 139 ft. 5¾ ins. wide, with headways of 14 ft. 11 ins.; engineer, Mr. M. Fitzmaurice; architect, Mr. W. E. Riley, F.R.I.B.A.; cost, £437,000.

These data are not derived from Mr. Tyrrell's book, in which the information about British bridges is rather scrappy and casual. He is more happy in recounting the development of scientific principles as applied to the problems of difficult situations, new materials and systems, and other matters which require technical description and discussion rather than historical research.

OUR PLATE.

A general description of Sir R. S. Lorimer's new Chapel of the Order of the Knights of the Thistle, which was opened by the King on July 19th, appeared in our issue of that date. This week we give, as a double-page centre plate, a view of the King's stall in the chapel, in which the wood carving is the product of 15 years of arduous work and study. The King's stall is raised a little higher than the stalls of the Prince of Wales and the Duke of Connaught, by which it is flanked, the height of the King's canopy being 33 ft., whilst that of the side stalls is 25 ft. The decorative motives, where not heraldic or conventionally allegorical, are taken from nature—the thistle, vine, rose, and acorn being conspicuous.

IN PARLIAMENT.

(By our Press Gallery Representative.)

The King Edward Memorial.

Mr. Dudley Ward, replying to questions in the House of Commons, said the First Commissioner of Works would have site plans in connection with the King Edward Memorial in Green Park prepared at once for exhibition in the Members' Tea Room, and he would try to arrange with the Memorial Committee that as further plans and drawings were matured they would follow for inspection.

Lord Balcarres asked whether the site of the statue had been settled before the design had been made.

Mr. Dudley Ward replied in the affirmative.

Mr. Lee asked whether the Government withdrew from the assurance they gave the House that they should be consulted with regard to any alteration in the Royal Parks.

Mr. Dudley Ward referred Mr. Lee to the Prime Minister.

In reply to further questions Mr. Dudley Ward said a map would immediately be placed in the House showing the site, but the dimensions of the site were not yet settled. The General Commitee appointed to carry out the memorial had decided to erect it at the Piccadilly end of the Broad Walk in Green Park. If a general desire for discussion was manifest in the House no doubt due arrangements might be made for such discussion.

Mr. Whitehouse asked the Prime Minister whether the Government had assented to the proposal of the Memorial Committee to erect the memorial in the Green Park.

Mr. Asquith said the Government would raise no objection to the site that was now proposed.

The Westminster Abbey Annexe.

In reply to Mr. King, Mr. Dudley Ward stated that the First Commissioner of Works anticipated that the building erected as an annexe to the west end of Westminster Abbey should be removed by the 19th of next month. Sir F. Banbury made the humorous suggestion that the building should be retained as an annexe to the House of Lords for the use of honourable members when they were made Peers.

Latrines in Westminster Abbey.

Mr. Keir Hardie asked Mr. Dudley Ward, as representing the First Commissioner of Works, whether he was aware that on the occasion of the Coronation portions of Westminster Abbey were partitioned off and fitted up and use as latrines, and whether this was done with the consent and authority of the Office of Works.

Mr. Dudley Ward replied in the affirmative.

Essex County Asylum Works.

Mr. Worthington Evans asked the Home Secretary whether he would stipulate in approving the new contract of detached buildings in connection with the Essex County Asylum Works, near Colchester, that local men should be employed, and that so far as possible all timber should be bought locally and prepared on the works in order to avoid causing unemployment among the 50 local joiners now employed by the present contractors.

Mr. Churchill replied that he had not yet received the contract. He would make inquiries on the subject, but he doubted if it would be within his power to require the insertion of such a condition as that suggested.

Development Fund and Building Grants.

The Development Commissioners in their first report state that applications were received from agricultural colleges in Scotland for grants amounting in all to £137,425. Edinburgh and Glasgow each asked £35,000 for college buildings, and the application from Aberdeen was for £31,000, including £5,000 for buildings, etc. The Scottish Education Department ultimately made one claim for £140,000, which covered all the applications. The Commissioners postponed the applications with regard to research until a committee has been appointed to deal with the whole subject of agricultural research in England and Scotland. With regard to the applications in respect of extension or renewal of college buildings and the provision of farms, the Commissioners have recommended the Treasury to grant a capital sum of £60,000 on condition that half of the expenditure is defrayed from the Development Fund, the other half being met by fresh contributions from the local authorities and persons interested, and by a contribution from the Education (Scotland) Fund—one quarter from each source.

An application was received from the Stonehaven Harbour Trustees for an advance towards the completion of the harbour works, which have not been completed owing to lack of funds. The total cost of completing the whole scheme was estimated at £18,000, of which £13,500 was required for further excavation. The Commissioners recommended that an advance should be made to the Harbour Trustees of £6,500 by way of grant and £7,000 by way of loan without interest, repayable by annual instalments in thirty years. This is made conditional on the Stonehaven Town Council guaranteeing the repayment of the loan, and the whole amount being devoted to the further excavation of the rocks within the outer harbour, which is estimated to cost £13,500.

NATIONAL GALLERY AND ST. JAMES'S PARK BILL.

The objects of this Government Bill, as described in the title, are "to appropriate certain lands for the purposes of the National Gallery and the National Portrait Gallery, and for other purposes connected therewith, and to make provision with respect to certain Crown lands forming part of or adjacent to St. James's Park." It is proposed to transfer the land which lies behind the National Gallery and the National Portrait Gallery, and has hitherto formed part of St. George's Barracks, from the War Department to the Office of Works, to be used for the extension of the Art Galleries from time to time as may be required. The second object of the Bill arises out of the alterations in St. James's Park as a consequence of the erection of the Admiralty Arch. The land on which the offices of the London County Council—adjoining the Admiralty Arch—are built are held from the Crown under a lease for a term expiring in April, 1958. For the balustrade which rounds off the sweep of the circus on the St. James's Park side of the Admiralty Arch it has been found necessary to encroach upon the small garden of the London County Council, and it is proposed to give the Council a leasehold interest in the corresponding piece of parkland allotted to them by way of compensation. The Bill has passed through the House of Lords and has been introduced in the House of Commons.

COMPETITIONS

Deptford Central Library.

Mr. Leonard Stokes, P.R.I.B.A., is to be the assessor in this competition.

Rochdale Infirmary.

The assessor appointed for this limited competition, in which provision is to be made, at a cost not exceeding £17,000, for 48 beds, is Mr. Alexander Graham.

Elementary Schools, Wallsend.

The first premium (£30) has been awarded to Messrs. Marshall and Tweedy, and the second premium (£20) to Mr. Edward Cratney. The assessor was Mr. A. W. S. Cross, F.R.I.B.A.

Seale-Hayne Agricultural and Technical College, Newton Abbot.

The assessor's awards in this competition are announced as follows: 1, W. H. Mitchell, Son, and Gutteridge, Southampton; 2, Josias Beare, A.R.I.B.A., Newton Abbot; 3, Crouch, Butler, and Savage, Birmingham.

LIST OF COMPETITIONS OPEN.

JULY 31. ELEMENTARY SCHOOL, LOWESTOFT.—Premiums of twenty, ten, and five guineas are offered by Lowestoft Education Committee for designs for an elementary school for 500 boys, to be erected at Roman Hill. Particulars on payment of 10s. 6d. Applications were received not later than June 24. Designs to be sent by July 31. Address, R. Beattie Nicholson, Town Clerk, Town Hall, Lowestoft.

JULY 31. PARLIAMENT BUILDINGS, WELLINGTON, NEW ZEALAND.—Premiums, £1,000, £500, £300, and £200. Particulars, Minister of Public Works, Wellington, New Zealand.

JULY 31. DESIGN FOR AN IDEAL COUNTRY HOUSE.—The "Daily Mail" offers a prize of £100 for a design for a country house to cost £900 to £1,100. Architectural assessors, Mr. E. C. T. Monson, F.R.I.B.A., M.S.A., and Mr. Edwin J. Sadgrove, F.R.I.B.A., M.S.A. Particulars from Carmelite House, E.C.

AUGUST 1. PUBLIC BATHS, NORTHWICH.—The Urban District Council of Northwich are prepared to receive the names of architects willing to prepare plans for the erection of public baths to cost not more than £7,000. Apply J. Arthur Cowley, Clerk to the Council, Northwich.

AUGUST 8. LAY-OUT OF BUILDING SITES, EGREMONT.—The Egremont Urban District Council offer two prizes of £40 and £10 respectively for a scheme to lay out, under the Housing of the Working Classes Act, 1890, building sites at Egremont and Bigrigg. Map of the sites, showing position and depth of drainage, water, and gas pipes, will be deposited for inspection at the Town Hall, Egremont. The Egremont site consists of 1 acre 1 rood 16 poles, and the Bigrigg site 3 acres 1 rood 28 poles. Further information may be obtained of the Surveyor, Town Hall, Egremont.

AUGUST 15. MONUMENT AT BERNE, to celebrate the foundation of the International Telegraph Union. Copies of the conditions can be seen at the R.I.B.A. Library, 9, Conduit Street, W. Particulars in our issue of January 11th.

SEPTEMBER 12-25. COURTS OF JUSTICE, ATHENS.—Competition open to foreign architects. Cost of building not to exceed £160,000. First and second premiums, £800 and £320. Plans, estimated costs and fee of £8 required. Particulars to be seen at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., and in the library of the R.I.B.A.

SEPTEMBER 16. LIBRARY AND ART GALLERIES, MANCHESTER.—Limited to the ten selected competitors in the first competition.

OCTOBER 31. NEW TOWN HALL, MARYLEBONE.—Premiums, £100, £75, and £50. Assessor, Mr. Henry T. Hare, F.R.I.B.A.

JANUARY 31, 1912. DESIGNS FOR FEDERAL CAPITAL CITY, AUSTRALIA.

NO DATE.—NEW BAPTIST CHURCH, NOTTINGHAM.—Nottingham architects wishing to enter a limited competition for plans of a new Baptist church and premises are requested to communicate with Messrs. Rorke and Jackson, solicitors, King Street, Nottingham.

CORRESPONDENCE.

Manchester Art Gallery and Library.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—It would be interesting to know what proportion of the Manchester competitors in the above competition is represented by the ten firms who append their signatures in the letter appearing in your last issue.

Why the letter itself was written it is difficult to say, for in the whole of the previous correspondence which appeared in the "Manchester Guardian," there was not the slightest suggestion that the Corporation conducted the competition on anything but fair lines, nor did the assessor's report suggest anything that would lead us to think that the selection of the ten final competitors was anything but a fair one.

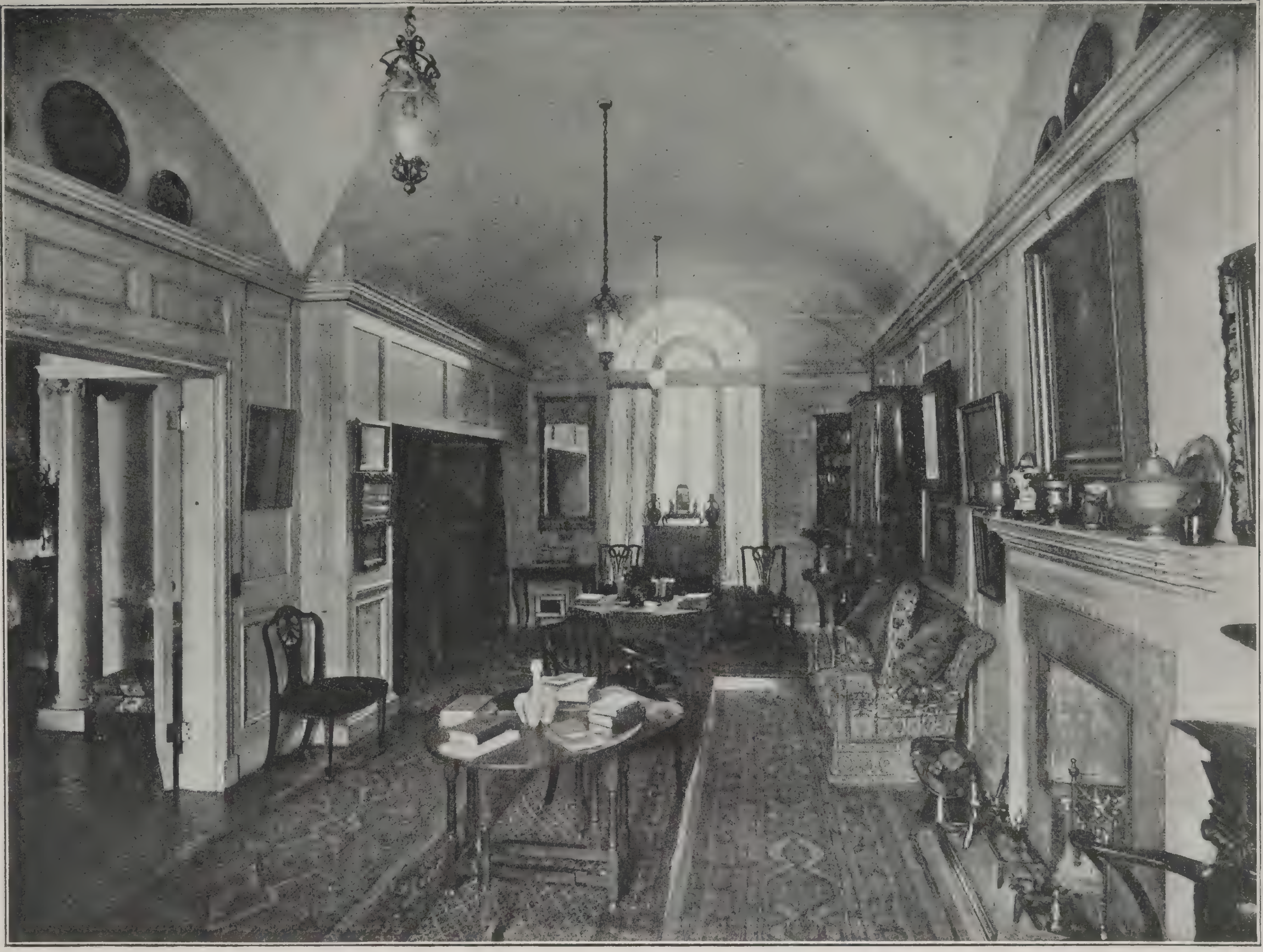
The particular points raised in the correspondence on the subject in the "Manchester Guardian," however, have yet to be met, and it is to these that one would expect a body of competitors to turn its attention.

Oldham. FRANK HEARNE.

BUILDING STONES.

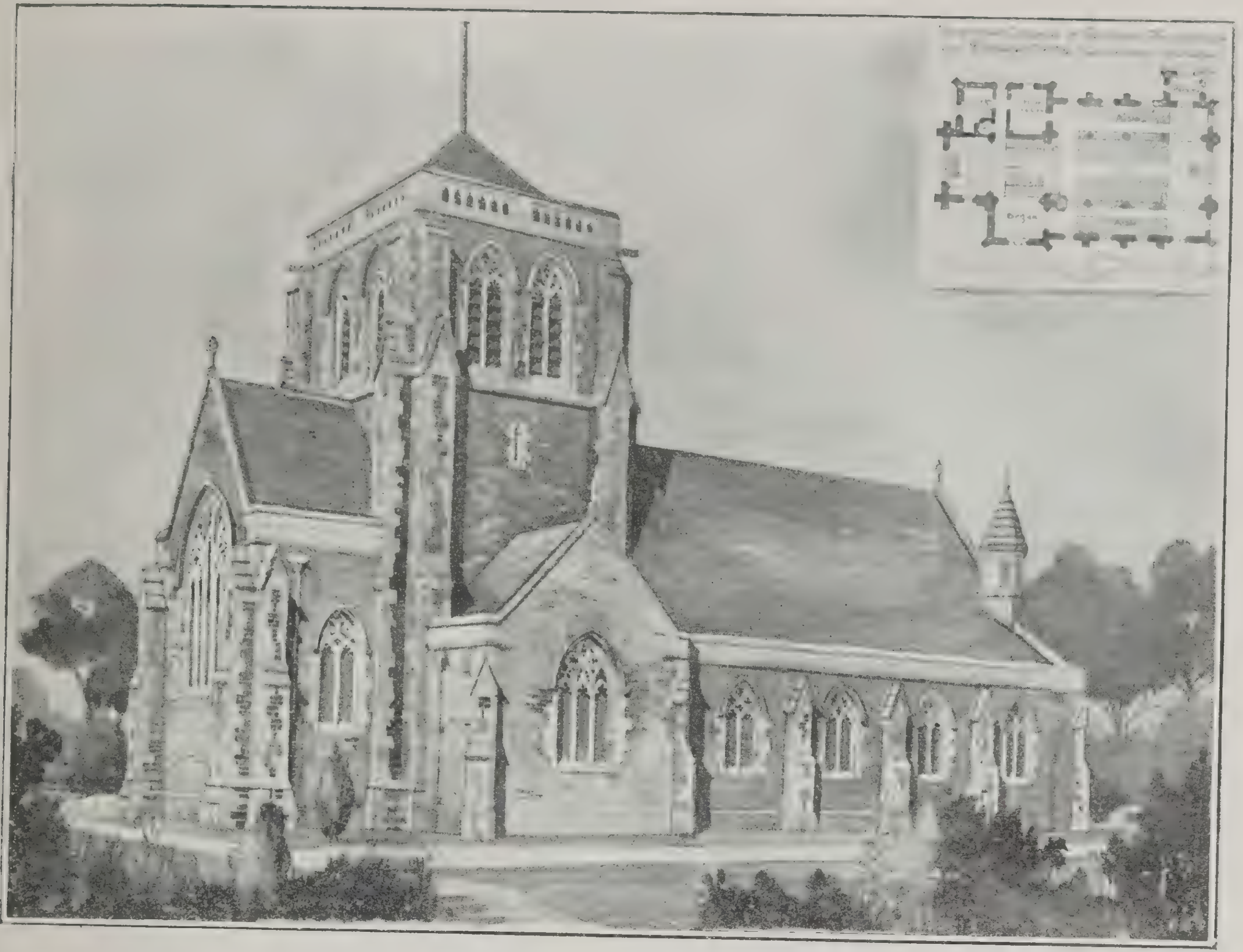
In the Sedgwick Museum at Cambridge there is an exceedingly fine collection of building stones, of which the learned and enthusiastic custodians hope—(to adopt their own modest phrase)—"that in due time it may be fairly representative of the building stones of the world." In the meantime it is sufficiently comprehensive to form the basis of a very useful book, in which the specimens are described so fully and clearly as to render the volume a most instructive manual of practical geology such as any architect would find it infinitely to his advantage to possess, whether for study or for reference. It will be found to contain nearly everything he need know with respect to the origin and characteristics o building stones, British and foreign, thei suitability for and behaviour in variou places and applications. It may, in fact be regarded as an indispensable addition t the architect's library. It is a digest o almost all that is worth knowing on th subject.

British and Foreign Building Stones. A Descri tive Catalogue of the Specimens in the Sedgwic Museum, Cambridge. By John Watson. Cambridge At the University Press.



NO. 24, DAWSON PLACE, LONDON, W.: THE GALLERY. J. W. SIMPSON AND MAXWELL AYRTON, F. AND A.R.I.B.A., ARCHITECTS.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



LOUIS AMBLER, F.R.I.B.A., ARCHITECT.

PICTURE EXHIBITIONS.

The Dowdeswell Galleries.

At the Dowdeswell Galleries there is on ew a fine collection of etchings by arious artists, many of them dealing ith architectural subjects. Those by Mr. edley Fitton, whose name is well known that of an etcher of architectural subcts, are nearly all of this class, and most them—one of "The Monument" especily—are powerful and effective, though e lines are rather too much laboured for e best quality of etching, which should tain its effect with few but decisive lines d plenty of untouched space. Those by r. Walter J. James, and Mr. Lumsden, ve more of this character; the latter has good etching, "The Crane," out of a mposition representing a building in ogress with a huge contractor's crane ing into the air over it. His etchings "Paris in Construction" are good. nong others, Mr. Oliver Hall's "Dudn Sands" and Mr. Osborne's view rom the National Gallery," with the lumns of the portico dark in the foreound, may be mentioned. Other artists resented are Mr. Percy Robertson, Mr. milton Mackenzie, and Mr. Albany E. warth; the last named artist exhibits great number, mostly of very good ality.

The Fine Art Society.

At the Fine Art Society's Gallery there a really remarkable collection of copies oil painting of a number of well-known tures by old masters, mostly on a aller scale than the originals, which ve been made by Mr. Mortimer Menpes free presentation to the Australian Government, on whose behalf they were formally accepted by the Australian Prime Minister, Mr. Fisher, at a specially invited meeting. Mr. Menpes is an Australian, and has taken this method of assisting his native country towards obtaining representations of many of the most celebrated works of the old masters The preparation of this set of copies has occupied several years, and they are no ordinary copies; they mostly represent the spirit and the colour of the originals with wonderful truth, and the colony may well be proud of a painter who has had the talent to produce these, and the generosity to present them to the country of his birth. At the same gallery is a collection of water-colour pictures for fans by Mr. A. Duncan Carse, which are exceedingly clever and original, and quite out of the usual groove of fan designs. A collection of water-colours by well-known artists, including some of the best work of Mrs. Allingham and Mr. Albert Goodwin, is on view in the same room.

Maclean's Gallery, Haymarket.

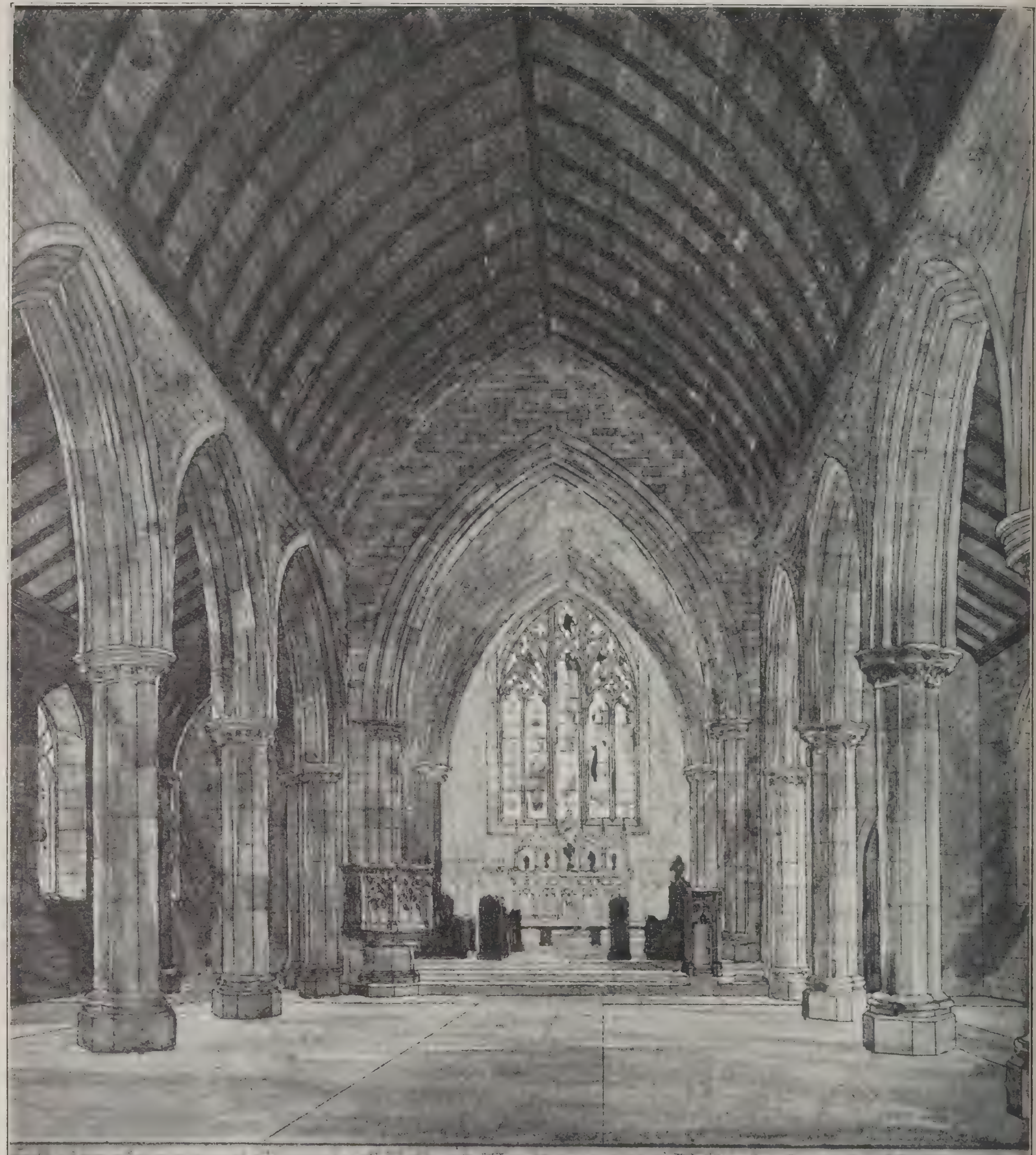
At this gallery there is on view a collection of works by various artists, including some fine sea pieces by Mesdag, and pictures by Ter Mealen, F. Maris, Rosa Bonheur, Theodore Rousseau, Mauve Diaz, and others.

Ropley Gallery.

At this gallery there is a small but excellent set of water-colours, chiefly of ancient towns and town scenery, by Mr. Gascoyne, well known as an architectural artist. Mr. Gascoyne paints in rather a low scale of colour, reminding one of the old school of English water-colourists; both his colour and his manner of composition are well suited to the class of subject which he mostly deals with. "Taormina," with the winding precipice road in the foreground, is a capital composition; among others we may especially mention the solemn composition called "Latomia, Syracuse"; "Albi," with its two bridges and the fortress-like cathedral on the hill; "Bezier," and various street scenes in the quaint old town of Najac. The exhibition is one which ought to be interesting to architects. The Ropley Gallery is in Duke Street, Manchester Square.

"A Century of Art, 1810-1910."

Under this title, Mr. Charles Ricketts has published, through Messrs. Carfax and Co., 24, Bury Street, an interesting booklet of 40 pages which apparently serves also as a guide to the exhibition at the Carfax Galleries. "It is a common belief," Mr. Ricketts writes in his preface, "that the development of landscape-painting has been the chief achievement of the last hundred years. This is so far true in that no other epoch has equalled it in the constant effort and success achieved in that direction. . . But we can point to masterpieces in other fields where greater æsthetic and passionate forces are at play. If we can say no painter has surpassed Turner in technical skill, we can say also no sculptor has surpassed Rodin in emotional range." The author passes in rapid review the influences that shaped and coloured the century under discussion and gave the character to its art; and he finds ample occasion for the exercise of an excellent faculty for criticism. Visitors to the gallery will be glad of this informative running commentary on the works exhibited and on the essential characteristics of their authors. This passage from the appreciation of Whistler will serve as a sample of the author's incisive method



Interior of proposed Church at Holbeck Woodhouse, near Welbeck: Louis Ambler, Architect.

of treatment: "Whistler . . . did not paint the world, but a dim appearance of it. His women are on the point of gliding back into the black mirrors from which they have emerged at the bidding of a conjurer. The nocturne (No. 87) might represent a congress of ghosts, or the sudden appearance of dim, bodiless dresses endowed for a moment with a wraith-like life in a garden shaded by ghostly trees; yet this is Cremorne in the days when it throbbed to the elegant melody of 'Tommy, make room your your uncle.'" Small wonder at Whistler's etherealisation of such a world. Obviously the booklet has a value beyond the specific purpose it was intended to serve.

PROPOSED CHURCH AT HOLBECK WOODHOUSE, NEAR WELBECK.

For many years past a corrugated iron mission room has done duty as a place of worship in the hamlet of Holbeck Woodhouse, which forms part of the ecclesiastical parish of Cuckney, Nottinghamshire, and lies just off the main road from Mansfield to Worksop, close to one of the entrances to Welbeck Park. The proposed permanent church is designed to be built on a new site at the corner of the village nearest the high road, but set back a short distance from it and on rising ground, with a good aspect on all sides. It is intended to have most of the work done by the estate workmen, with local stone from the Cresswell Crags quarry for the walls, inside and outside, the external dressings being of Weldon stone and the internal arches and vaulting ribs under the tower of Ancaster stone, the roof of oak covered with Precelly rustic slates, the floor under the seats laid with oak blocks, the passages paved with Bolsover stone, the chancel and sanctuary floors and steps of Derbyshire and Devonshire marble, and the seats and other fittings (except the font) of English oak. Mr. Louis Ambler, F.R.I.B.A., of London, is the architect. The two drawings of the exterior were hung in last year's Royal Academy Exhibition.

AGAZINES AND REVIEWS.

The *Art Journal* of this month is more
an usually occupied with decorative
rk, less than usual with pictorial art.
r. Lenygon contributes an article on
The Chinese Taste in English Decora-
on." It is interesting to note that
ambers, who actually visited China, re-
rded his own efforts in Chinese furni-
re and architectural decoration as use-
l to correct the mistaken ideas of the day
regard to Chinese art, but not as very
mirable in themselves; only what, as
says, "one was sometimes obliged to
," referring, of course, to the tyranny
fashion. M. Jourdain contributes
e first of a series of articles on "In-
iors of English Mansions," beginning
th Holkham, which was considered on
completion to be the best furnished
ansion in England, and the furniture
s all been preserved. The examples
ustrated are splendid of their kind, but
e type is mostly, as might be supposed,
ry rococo. The best thing is the book-
se for a recess in the sculpture gallery;
is has the merit of being simple and un-
etentious, which cannot be said of most
the furniture. "Tapestry weaving in
ngland" is the subject of an article by
r. W. G. Thomson, with a page illus-
ation of a fine piece of sixteenth century
pestry. We learn from a paragraph in
e *Art Journal* that Mr. Reynolds-
ephens has received £1,700 from the
ademy for the purchase of his sculp-
re, "A Royal Game," out of the Chantrey
nd; a most inadequate sum, which can
rdly do more than cover the cost of pro-
cing the work. We may congratulate
e Journal on its paragraph with regard
the Queen Victoria Memorial, to the
ect that in carrying out the commission,
Sir Thomas Brock has supported his
putation for great technical skill, and
s achievement is praiseworthy." It could
t have been better put.

In the *Burlington Magazine* a short
itorial article comments with justifiable
tisfaction on the fact that the magazine
s reached is hundredth number, in spite
doubts at first, both from within and
om without, whether such a publication
uld be made to pay its way. The *Bur-
gton* has furnished us with articles on
any artistic topics, showing a higher
gree of expert knowledge than is gener-
y found in articles of this kind, and
pert knowledge is of the highest value;
t knowledge is one thing and criticism
another. In regard to St. Paul's Bridge,
e editor seems to think that the Insti-
te of Architects should have put in an
pearance before the Parliamentary Com-
ittee; they would have been only too glad
do so; the simple fact does not seem to
understood, that they had not the funds
employ counsel, without which their
pearance would probably have been
eless. It is all very well to say that the
stitute should be able to protect the
blic from the effects of its own ignor-
ce in artistic matters; it has endeavoured
do so over and over again, and has
r the most part only met with insult in
turn. Among the contents of the pre-
nt issue are an article on "Some Flemish
inted Glass Panels," by Mr. Aymer
llance, with coloured plates in illustra-
n. An article on "The Primitive Ten-
ncy in Modern Art" contains a great
al with which we should agree in as
r as the words are concerned; where we
e in doubt is as to their intended appli-
tion. We quite agree that one note of
really decadent art is "to simulate a
se perfection through an inexpressive finish and a meaningless symmetry of design"; but there are other forms of decadence besides this; there is the decadence of assumed inner meaning which is to atone for careless and sloppy execution, and that is quite as bad a form.

The *Architectural Record* (New York) is largely occupied by two illustrated articles on "The Old and the New South"; architecture in the Southern States in old days and recent architecture there. There is nothing particular to be learned from the article, but the contrast between the buildings of the old and the new period, as shown in numerous illustrations, forms a most interesting bit of social history and character expressed in architecture. The sets of buildings hardly seem to belong to the same nation, though there is one instance in which a modern architect seems to have taken a leaf out of the old book. In the older buildings we often come on columned porches with unusually slender proportions in the columns, simply because they are of wood and not of stone, but in a stone porch of a modern residence at Macon (Georgia) the architects, Messrs. Hentz and Reid, have adopted these slender proportions in Ionic columns of stone. It looks startling at first, but, as the writer of the article observes, the columns are strong enough to carry the stone entablature, and why should we require them to be thicker than is necessary for that purpose? Well, we should say that tradition goes for something; but it is a point, at all events, suggesting consideration.

The *Fortnightly Review* contains an article by Mr. Comyns Carr on "The English School of Painting at the Roman Exhibition," which is practically a kind of critical balancing of the qualities of the great English painters there represented, written with a great deal of judgment and insight, and in a very broad and tolerant spirit.

The *National Review* contains an anonymous article called "The Rejected of the Royal Academy," in which the Council of that body are somewhat recklessly accused of professional jealousy in rejecting certain works. We do not believe a word of it. The jealousy in these cases is not on the side of the Academy, but on the side of the people who abuse it; and though there are many poor pictures at every Academy exhibition, we do not believe there is any year when there are not better pictures in the Academy than are to be found in any other exhibition.

Scribner, we are glad to see, includes under "The Field of Art" a paper in favour of the revival of the beautiful art of wood engraving, which has so sadly fallen into neglect of late years, and which has a quality of its own that cannot be supplied or imitated by any other form of black-and-white execution. The writer of the article, Mr. Weitenkampf, suggests that the real way to revive wood engraving would be to regard it—as etching is now regarded—as a painter-engraver's medium for the production of original work, and there is a great deal to be said for that; but still it is a high value as a medium for reproducing pictures, far superior in that sense to any of the reproducing processes which have for the present driven it out of the field; and this is nowhere better shown than in the work of one of America's own engravers, Mr. Timothy Cole. The same number contains an admirable article by Mr. Kenyon Cox on "The Subject in Art"—the importance of the choice of adequate subjects for treatment in pictures; and we are glad to say that he is altogether opposed to the foolish prejudice to the effect that a picture should never perform the duty of telling a story. This parrot cry has been set up by one school of critics of late, as if it were a special merit in a picture that it should have no definite meaning. What are "The Transfiguration," the "Surrender of Breda," the "Bacchus and Ariadne," but stories told—sublimely told, no doubt—in pictures? but certainly these are not pictures without a story.

MUNICIPAL ENGINEERING AS A PROFESSION.*

BY B. WYAND.

There no longer exists the need to drive home the fact that municipal engineering is a distinct profession. There was a time when the statement would have been met with a shrug of the shoulders or a curl of the lip. To-day no dispute is possible. The profession is recognised universally.

I am not going to weary you with any of the clap-trap which is talked about the nobility of the profession. There is certainly no profession in which the possibilities of doing good to one's fellows are so great as that of municipal engineering, but it can scarcely be claimed that the engineer had that fact in view when he competed for his appointment. The inspector of nuisances stands in the same position, and to speak of the inspector as a hero who girds on his armour and goes forth to fight the battle in the high cause of humanity is just merely clap-trap. I have met inspectors whose ideals were not quite so high as this.

The Sanitary Officer.

While speaking of the sanitary inspector, a few words on his behalf may be said. There are, of course, inspectors whose sole work is to carry out the orders of the medical officer of health. They are a kind of sanitary police, in whom the organ of smell is popularly supposed to be abnormally developed. They call on cases of infectious disease, and may possibly convey the various complaints wholesale about the district—precisely as the doctor may do. No precautions are taken, and the inspector goes cheerfully from small-pox to diphtheria, from diphtheria to scarlet fever, and so on, calling by the way for refreshment and physical sustenance. His lengthy journeys in rural districts compel this, and I am finding no fault with him. His other duties are to investigate complaints and to furnish his medical officer of health with sufficient detail to make a formidable report to be prepared and signed by the latter gentleman. There is, however, another class of inspector whose duties include the planning and supervising of engineering works. He is mostly known as a sanitary engineer, although no such appointment is officially recognised. The word "sanitary" is, however, damning, and he is regarded as quite inferior to that official whose whole duties may consist of the maintenance and repair of macadam and gravel or flint highways. The matter is one well worth the consideration of the profession in general, and the hand of fellowship should not be refused simply because of the restricted definition of a word which really embraces very much.

The Consulting Engineer.

Municipal engineering is a profession which will some day be found to have usurped the whole field of engineering, except that form known as government engineering. The consulting engineer will probably suffer. As matters are now, the municipal man is not encouraged to prepare schemes of any magnitude, and many who are really capable—there are, of course, quite as many (if not more) who are not capable—conceal their knowledge. There is always trouble about payment where the salaried officer is concerned, and when a fee is arranged it is usually only a proportion of that which the consultant would be paid. Honorariums are merely a means to an end—the end being the payment of an amount equal to about one-tenth of that which is morally due.

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*Portions of a paper read at a Western District meeting of the Institution held at Worcester on July 15.

Municipal schemes to run means more responsibility for the officer, and the necessity for a better class of officer—a more highly trained and more intelligent man. This, again, means higher salary, larger staff, and better accommodation, together with the less frequent requisitioning of the consultant. It may be urged that never was the consultant so in evidence as during the last few years. It is quite true, but it has to be remembered that he is largely engaged in installing first schemes. Extension will not, in scores of cases, go to him; for the necessity for a highly trained man to run a concern does away with the necessity for another highly trained man to repeat, to improve or to extend what has already been done.

Security of Tenure.

The author, having declared that "the humble, shrinking individual who is led by his Council is never likely to command either respect or a periodical increase of salary," would say nothing harsher of councillors than that they are entirely unnecessary, and that security of tenure will be difficult of attainment so long as district councils exist. It is not to be expected—it would be foreign to human nature—that councillors would welcome the continued services of a man with whom they had quarrelled, and of whose services they had endeavoured to rid themselves. The life of the officer would be intolerable; indeed, things would be made so unpleasant for him that he would welcome resignation. There is a popular fiction current to the effect that the sanitary inspector is protected by the Local Government Board. He has no more real protection than the surveyor, and councils may do as they please with him. The sole duty of the council should be the making of the rate, and this could be as well done by one man as by twenty—the collector could, in fact, do it. Directly a council concerns itself on engineering matters it becomes ridiculous, and the effect of its interference is to hamper the technical officers. These should be appointed by a central controlling authority, and should be removable only for misconduct, or at an age when a pension (and a sufficient one) falls due. They would be responsible to the central department only, just as are police and Post Office officials. What would happen were these classes appointed and dismissed at the pleasure of small local bodies? Perhaps, when councils no longer exist, the municipal engineer will be appreciated at his true worth.

Salaries.

Municipal engineers are usually woefully underpaid and overworked. Higher salaries and less hours of labour would reduce the ranks of the unemployed, and the overcrowding question would not recur for years. There would be room for thousands if proper and sufficient staffs were engaged. £150 a year should be the minimum salary for even a deputy or chief assistant.

Qualifications.

The full qualifications for a municipal engineering appointment are so many and so varied that no one man could satisfy such a standard. The essential qualifications would place no light tax on a man's abilities, and none should be appointed without these. Some towns have, I believe, passed resolutions to the effect that no man should be appointed who has not passed the examination of the Institution of Civil Engineers qualifying for at least associate membership. This is, of course, pure nonsense; indeed, so far as municipal engineering goes, the examination is three-fourths sheer waste of time. While there are special examinations for municipal engineers, it is as ridiculous to ask a man to pass another as it would be to ask a judge to pass in surgery because he might on some occasion have to hear an action in which a broken leg was introduced. That some limitation should be imposed upon the appointment of quite unqualified men no one will deny, but it is equally important that the test to be undergone shall be a reasonable one.

SCHOOLS OF ARCHITECTURE.

Architectural Association School of Architecture.

The session 1911-12 programme, which has just been issued, of the Architectural Association School of Architecture, gives full particulars of the Day School and Evening School courses at 18, Tufton Street, Westminster. The Director of Education is Professor Beresford Pite, F.R.I.B.A., and the Head Master Mr. H. P. G. Maule, F.R.I.B.A. In the Day School the assistant masters are: First year, Mr. Alan Potter and Mr. Alan L. Snow, A.R.I.B.A.; second year, Mr. H. A. Douglass, A.R.I.B.A., and Mr. Guy Church, A.R.I.B.A. In the Evening School the master is Mr. C. E. Varndell, A.R.I.B.A., and the assistant masters are Mr A. C. Dickie, A.R.I.B.A., and Mr. J. B. Scott.

The course, as recommended by the Board of Architectural Education, should occupy at least four years—namely, two years preliminary work in the schools, followed by two years in an architect's office either as pupil or improver, while the training in the schools should continue in the evening during the two-year term in an office. Students are not admitted to the second year's course unless they have given satisfactory proof of study, work, and progress throughout the first year. The Evening School carries on the work of the Day School for the third and fourth years, and provides also for those students who may not have passed through the Day School but are already articled. There are several scholarships, prizes, and exhibitions.

University College (London) School of Architecture.

A day course in academic design will begin in October, 1911, at University College, University of London. The course will be conducted mainly on the lines of the course in the Ecole des Beaux-Arts, Paris. Dr. J. J. Burnet, A.R.S.A., F.R.I.B.A., has consented to act as architect-visitor, and criticise the designs submitted from time to time as may be necessary. Dr. Burnet was a pupil of M. Pascal for three years in Paris, and is one of the very few architects practising in England who have gone through the full course at the Ecole des Beaux-Arts and passed into the first class. The course is not intended for beginners, but for those who have already attended a course of recognised training at a university (or other institution), or have otherwise obtained their preliminary education. In the prospectus it is urged that the need for such an advanced course has long been manifest. A large number of students, after their pupilage stage is passed and after they have spent some time in an architect's office, are often at a loss to know what to do next. Few are able to start practice on their own account with sufficient work to keep them fully employed, and yet often have enough to do to make it difficult for them to continue as assistants. Many also have had no opportunity of working out problems for themselves on a large scale, or of seeing such problems solved in offices in which they have worked.

The studio will be open from 9 a.m. to 6 p.m. (official hours, 10 to 1 and 2 to 5) on five days a week, from 9 a.m. to 1 p.m. on Saturdays, and from 7 p.m. to 9 p.m. on three evenings in the week. Students can work the whole of that time; but, in order to give men whose time is partially occupied, either on their own work or as half-time assistants, opportunity for continuing that work whilst taking the course of academic design, qualifying attendance is fixed as equivalent to 25 full days per term. Students who qualify can submit their drawings at the end of the session in competition for the prizes which wil be offered. Qualifying attendance in each term can be made in any manner the student prefers. Three evenings' attendance will count as equivalent to one day.

There will be no definite entrance examinations. All students will be eligible who can produce drawings to show tha (1) they have a thorough acquaintanc with the "orders," perspective, and sciography; (2) that they can express this by good drawing; (3) that they have passe through a course on construction; (4) tha they have a fair knowledge of design.

During each session (which consists o three terms) four "projets" or subject will be set. Two months will be allowe for each:—(1) October and November (2) December and January; (3) Februar and March; (4) May and June. Th custom in the "concours" at the Ecol des Beaux-Arts of allowing students onl one day in which to prepare their sketc designs may require modification at first This course of academic design is additional to the two day courses which ar arranged to lead up to the academi course. These have been in existence fo eight years at University College:—(Degree course (B.A. Honour in Architecture, three years); (2) certificate course three years. These courses, which are intended for beginners and students not ye competent to take the advanced course o academic design, will continue as before

Further information and any fuller particulars required may be obtained from Prof. F. M. Simpson, F.R.I.B.A., University College, London, Gower Street W.C.

Building Trade Lock-out in Sweden.

Negotiations which have been proceeding between the masters and men in th building trade in Sweden having prove abortive, the men refusing to accept compromise arrangement to which th employers have already given their assent, 40,000 men engaged in the trad were locked out in all parts of the country on July 10th.

NTS TO USERS OF POLISHED GRANITE.

BY P. W. ABBOTT.

Polished granite is justly esteemed ong building materials for its com- ation of strength and beauty, and its nirers claim that no other material is once so durable, so decorative, and so ily cleaned. That it is not in more eral use is due principally to two con- erations—expense, and the time re- ired for delivery.

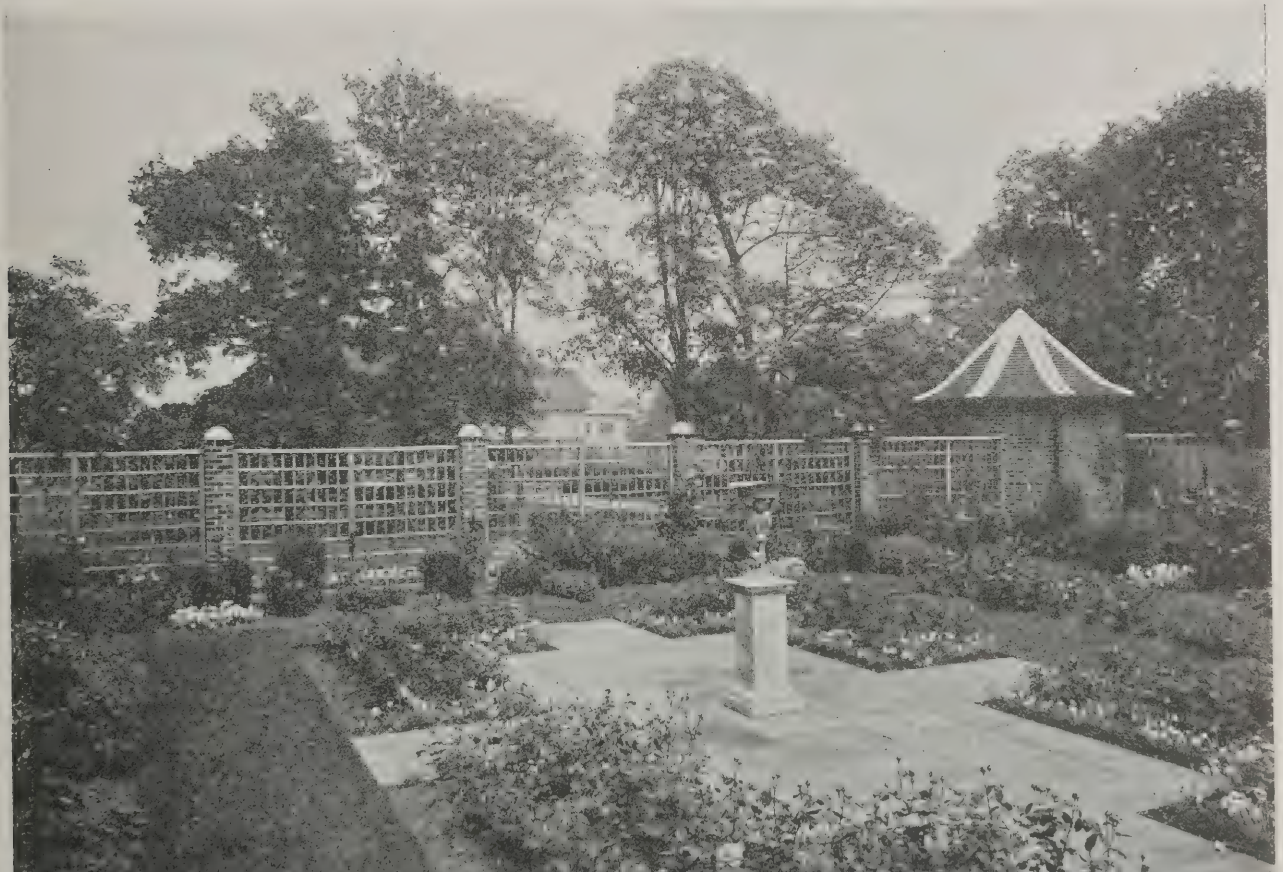
The comparative expense of granite is rtly inevitable, for obvious reasons; t a consultation with the granite mason il often result in suggestions that will nsiderably lessen the cost without af- ting the appearance. There are gener- y two or more methods of arriving a desired result. The question of de- ery time, in the great majority of in- nces, should cause no difficulty what- er. The granite is required when the ound level is reached; therefore the ler should be placed early. It is not all necessary that final dimensions ould be furnished with the contract. If particulars are sufficiently clear to able the mason to secure the blocks and t the first rough work done, much time ll be saved; and when it is impossible give exact dimensions for the latter ocesses—as, for example, the over-all ngth or height—a little can generally left on some of the stones to be jointed later, even on the site, if necessary.

Two other points should be noted. In asking for tenders for polished granite, quantities alone are not sufficient. Even for simple jobs, drawings should be supplied. The material is so hard, and the manufacture so costly, that the provision of drawings is necessary to enable the mason to estimate closely. He must know, for instance, how many stones go to the super ft. of polishing. This affects labour in the setting of the stones in the machines, and the price of the raw material varies with the size of the blocks. When moulded work is included, full sizes should invariably be given. In the placing of the contract, it is unwise to take third-party risks. The architect should know the firm actually doing the work. Aberdeen has a practical monopoly of the polished granite trade. Apart from Cornwall—where the local stone is used—the English production of polished granite is a negligible quantity. In Aberdeen there are seventy or eighty polishing firms, but of this number, of course, not all have either the equipment or the experience necessary to enable them to turn out a considerable building contract accurately and quickly.

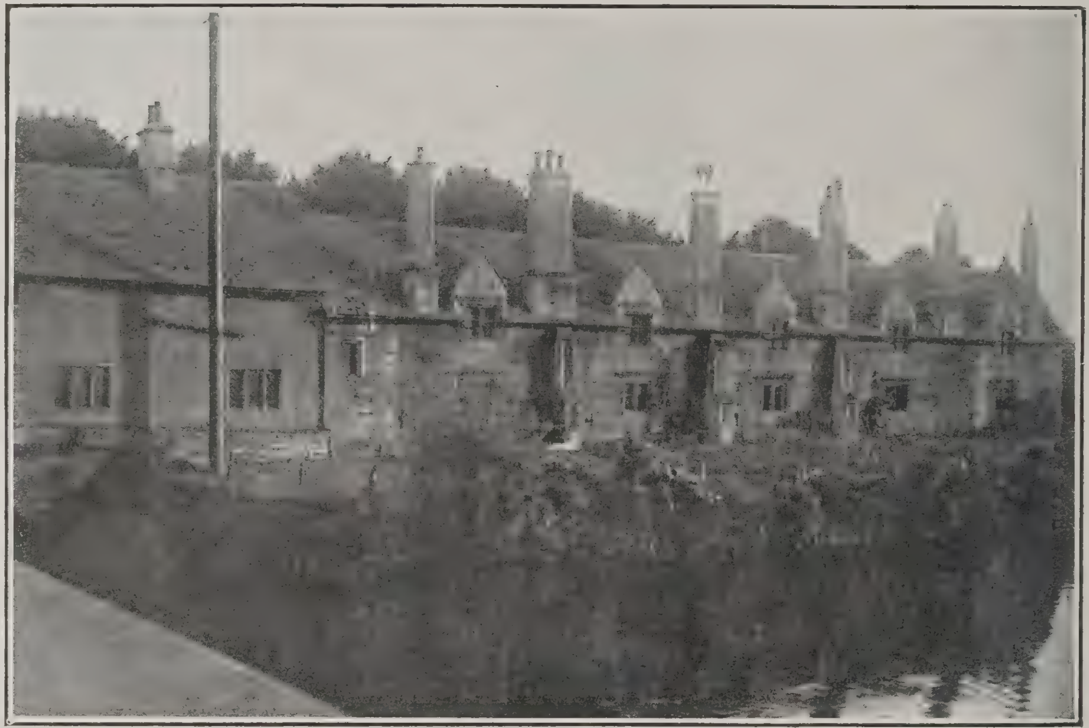
The usual practice, when an architect leaves the buying of the granite to the builder, or deals with a merchant, is for the latter to duplicate the quantities—generally, but not always, the drawings also—and scatter them among the Aberdeen firms. The lowest tender may be accepted, it may form the basis of an offer, or it may be used to bring down the second man on the list to a figure below zero. Now, while cheapness is no doubt a desirable quality to the builder or merchant, whose chief concern is his profit, the architect and his client have other aspirations, and may prefer to pay a little more for the assurance of good workmanship and quick delivery. It has often happened that when an architect has become exasperated by prolonged delay or inaccurate work, and has insisted upon being put into touch with the granite mason, he has discovered, too late, that his contract has been placed with a firm lacking the requisite facilities.

GARDEN DESIGN.

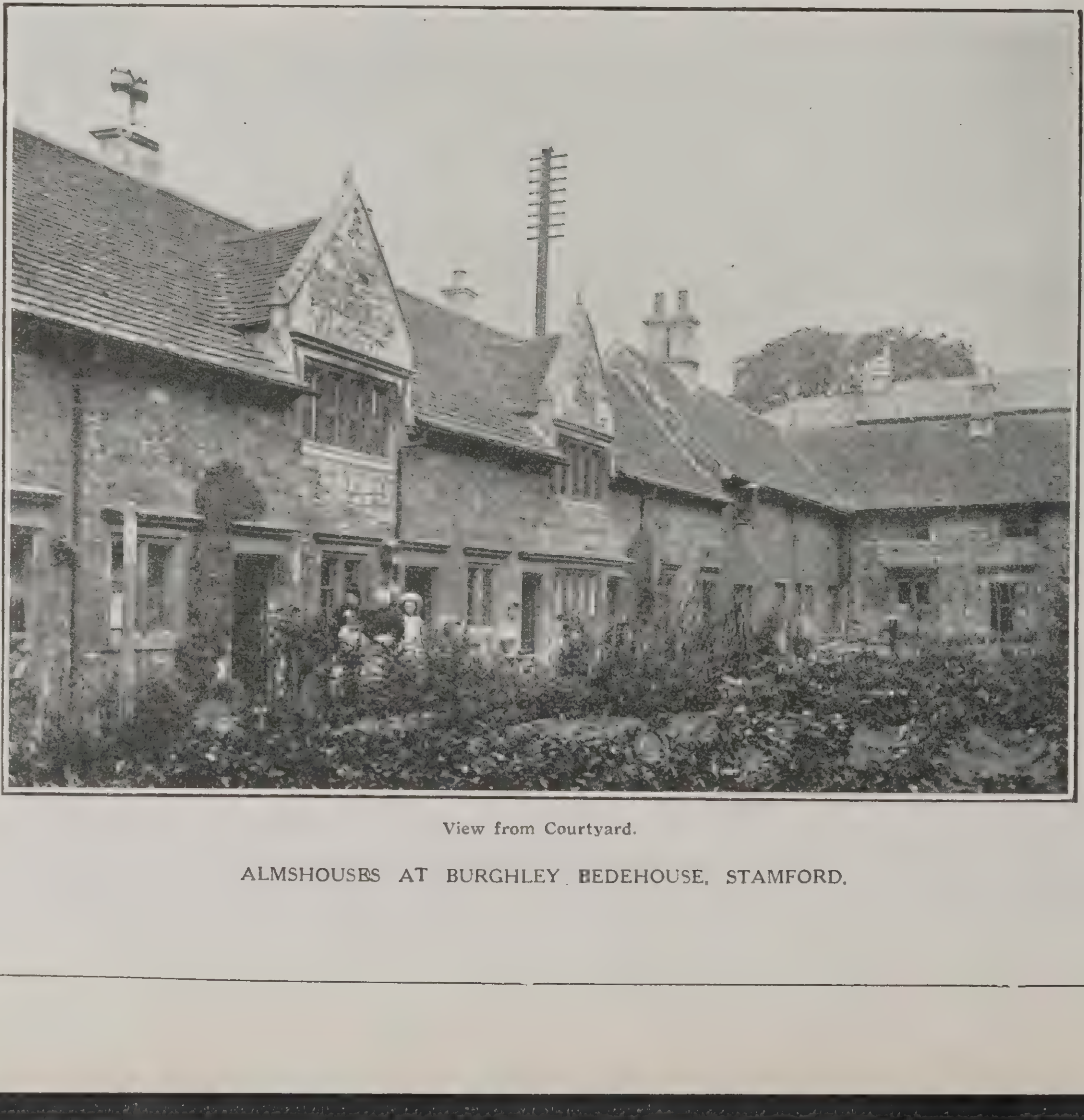
One of the most charming garden designs in the kingdom is to be seen at Wych Cross Place, Sussex. It is one of the many fine schemes conceived and carried out by Mr. Thomas H. Mawson, Hon. A.R.I.B.A., and among the most interesting features (of which there are many) of the general plan is the simple and dignified wall garden here illustrated. The rose garden at "Greenwood Stocks," Essex, also designed by Mr. Mawson, is, as the view shows, a delightful corner. The trellis is of oak, the brick piers being crowned with concrete half-balls as finials on the capping, while the garden-house at one side has a tiled roof with broad lead hips that invest it with definite character.



THE ROSE GARDEN, "GREENWOOD STOCKS," ESSEX.
THOMAS H. MAWSON, HON. A.R.I.B.A., GARDEN ARCHITECT.

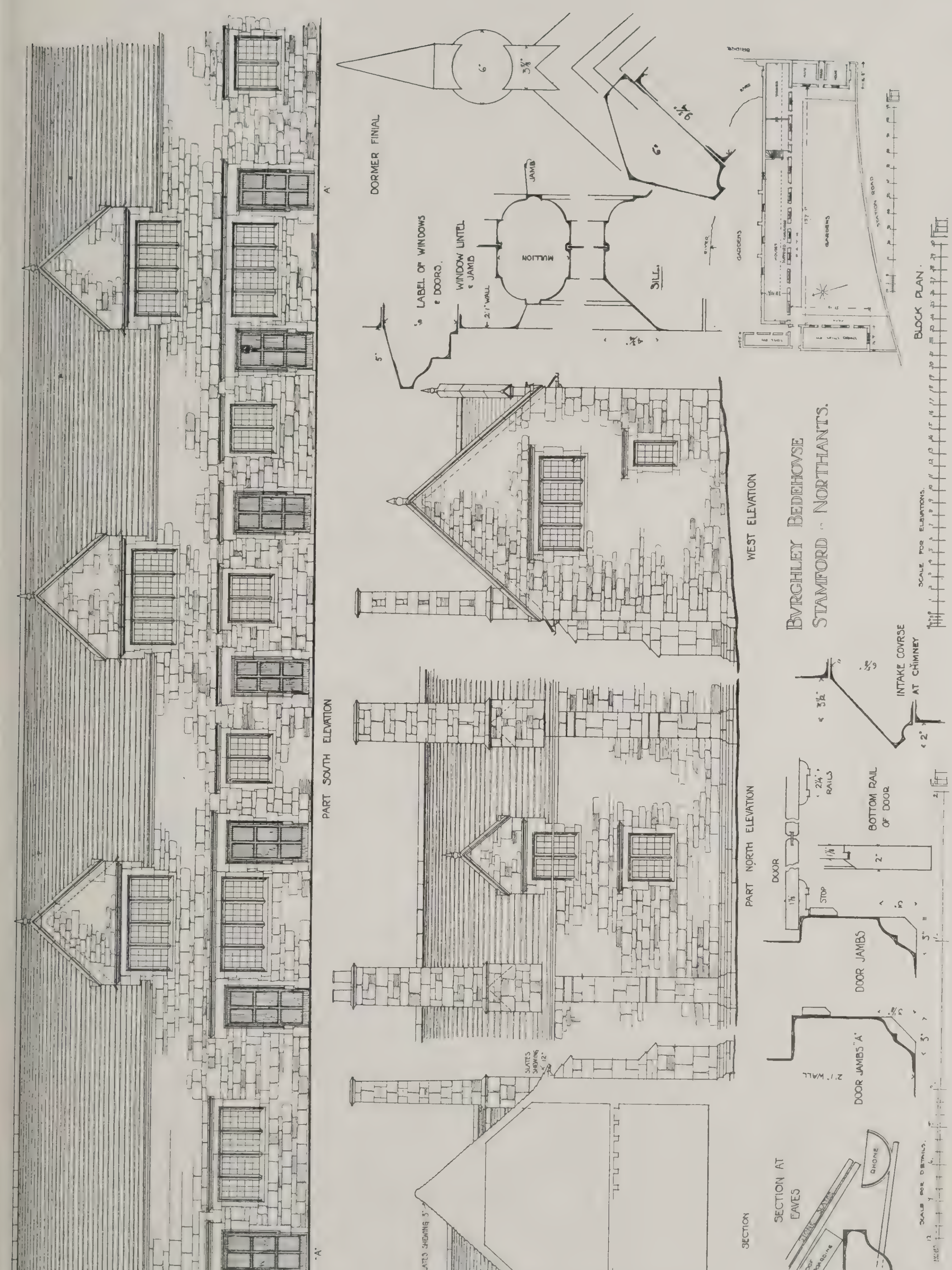


View from Bridge.



View from Courtyard.

ALMSHOUSES AT BURGHLEY BEDEHOUSE, STAMFORD.



BVRGHLEY BEDEHOUSE
STAMFORD - NORTHANTS.

MEASURED AND DRAWN BY JOHN B. LAWSON.

DETAILS—OLD & NEW.—XVIII.

Burghley Bedehouse.

The old masons used stone for their buildings with a fine distinction. They were also the foster-parents to rare statuaries. Michelangelo's foster-mother was the wife of a stone-cutter, and he always averred that he drew in, with the mother's milk, his love for his first and most loved art. For the great part the ancient lapidaries are silent as to their names, but their manifold works bear witness to their skill and art in many a lovely place—in deep embowered garden, by the side of still waters, in the bustling town, in the quiet churchyard. Burghley Bedehouse is an admirable little building, very simple and straightforward with its wings stretched out to trap the sunshine to its midst. It is a fine piece of masonry—in gable and wall and window. If it is destitute of carved and fantastic ornaments, it is not so of masonlike conceits. What are the skewbacks to the gables, the apex stones and finials, the diminishing chimneys, but the mason's expression of pride in his handicraft? It is all traditional, if you will, and the variations are slight between this and that, but there is enough difference to show that the man who contrived it had a soul, that he was at pains to make it beautiful as well as useful. The anonymous builder of the Bedehouse did it well. Notice how the south is free of the sun, how the long windows invite his beams to fill the rooms with its joyous influence; notice how the north is scarcely penetrated even for light, and that the great chimneys are put there even as buttresses against the stress of storm, the sad north wind with its burden of snow and bitter cold. Tradition was still strong among builders when Lord Burghley built his Bedehouse in 1597. He did not need to take thought of an architect.

J. M. W. H.

THE LIFT SERVICE AT THE ROYAL LIVER BUILDING, LIVERPOOL.

The huge building which has been erected at the pierhead, Liverpool, for the Royal Liver Friendly Society, from designs by Mr. W. Aubrey Thomas, was officially opened on Wednesday last by Lord Sheffield, the senior trustee of the Society. The total cost has been £700,000.

The lift service is a very extensive one, and calls for more than passing notice. There are no fewer than 15 passenger lifts, four of which travel at a speed of 300ft. per minute to a height of 148ft., serving 11 floors; six express lifts run at speed of 400ft. per minute, serving 7 floors; while two express lifts, running at the same speed, serve 3 floors. Two express lifts, travelling a height of 163ft. at speed of 400ft. per minute, serve 3 and 4 floors respectively, and one lift, travelling a height of 208ft. at speed of 400ft. per minute, serves 6 floors.

In the case of the express lifts, they run at full speed until reaching the first floor which they serve, and then slow down automatically to a speed of about 275ft. for the upper floors.

These lifts are arranged in batteries similar to those in large buildings in America. Ten of the lifts are arranged in the centre of the building, six being express lifts, while four similar lifts are arranged at the pierhead entrance.

The motors are rated at 25 h.p., running at a speed of 800 revolutions. Each motor is coupled directly to worm and wheel winding gear, and each cage is suspended by four steel wire ropes and counterbalanced by cast-iron weight.

The cages are constructed with steel frame and suspension bar, with special safety gear fitted beneath and operated, in case of failure of suspension of rope, by an independent safety rope.

There are also two goods lifts, each of which is arranged for load of 1 ton at speed of 150ft. per minute, travelling 165ft.

Special interlocking gear is fitted to all doors, both for passenger and goods lifts, to prevent any door being opened unless the cage is opposite the same, and to prevent the lift being started unless all the doors are properly closed.

The installation, which is unique in this country, has been carried out by Messrs. R. Waygood and Co., Ltd., of Falmouth Road, London, S.E.

NEWS ITEMS.

Hotel on the Site of St. George's Hospital.

It is stated that steps are being taken to secure the site of St. George's Hospital, Hyde Park Corner, for a palatial hotel, and that an offer of £1,000,000 is being made for the present site and building.

A new London Hospital.

A new hospital is being erected in Judd Street, St. Pancras, W.C. The foundation-stone was laid on July 5th by H.R.H. the Duchess of Albany. The general contractors are Messrs. Patman and Fotheringham, Ltd., of Theobald's Road, W.C., and Islington, N.

Margate Improvements.

The front improvements at Margate, consisting of a winter garden, bandstand, and concert-hall, which when finished will cost between £20,000 and £30,000, will be opened by the Mayor of Margate on August 3rd.

The Homeland Handy Guides.

The latest additions to these most useful and excellently produced little guide books deal with North Walsham and the Norfolk Broads, and Yelverton (S. Devon). The price of these booklets is only 2d. nett, and a wide sale is therefore assured to them. They are published by the Homeland Association, Ltd., Chandos Chambers, 15, Bedford Street, W.C.

Construction of St. Paul's Bridge.

Under the Bill which has now passed through the Commons, a period of ten years is allowed for the building of St. Paul's Bridge and the reconstruction of Southwark Bridge. Work on Southwark Bridge will probably occupy three years, and seven in the case of St. Paul's Bridge. In either case no actual building is likely to be begun for another year, questions of design and compensation having to be settled beforehand.

A Machine for dealing with Hardwood Paving Blocks.

A machine for treating old hardwood road blocks, recently patented by Messrs. Phillips and Co., of Walworth Road, S.E., is claimed to work a process whereby the life of the blocks may be greatly extended. It is stated that the machine will remove automatically and in one operation all foreign substances adhering to the wood of the used blocks, that it takes off the burred edges, and saws off the used and uneven surfaces to any required thickness at the rate of over 1,000 blocks an hour, and they are then suitable for being relaid. It is understood that the first of these machines has been acquired by the Southwark Borough Council.

Lincoln Girls' High School.

The new building which has been added to the Lincoln Girls' High School, at an expense of over £5,000, and was opened last week, provides, in the basement, accommodation for the working of the kindergarten system, dining-room, and a kitchen for teaching cookery, with scullery adjoining. The next floor contains additional accommodation for classes, a library, staff cloak-room, and three music-rooms; while the upper floor contains a drawing-room, chemical and physical laboratory, a science-room, classroom, etc. There is also a gymnasium. The architect is Mr. W. Watkins.

L.C.C. Works Department.

At last week's meeting of the London County Council, on a recommendation of the General Purposes Committee that contracts should be entered into with various firms for the execution of architectural jobbing works, Mr. Stanley Holmes moved that the report should be referred back to the committee with instructions to them to prepare and submit to the Council a scheme for the direct employment of labour on jobbing works. He said his proposal in effect was that they should re-establish the Works Department, though probably on different lines. The motion was seconded by Mr. J. May, and generally supported by the Progressive members. On a division, it was rejected by 55 votes to 37.

Proposed Extension of the National Portrait Gallery.

In the 54th annual report of the Trustees of the National Portrait Gallery, which has just been issued as a Parliamentary paper, Mr. C. J. Holmes, the Director, Keeper, and Secretary, states that the available wall space in the Gallery is now so completely filled, that it i almost impossible to find proper place for new acquisitions. A rearrangemen of the collections on the upper floor which is in immediate contemplation, may enable the more important and finer portraits to be shown in a proper light, bu the general congestion of the Gallery cannot be relieved except by a considerabl extension of the building. The Trustees hope that the Parliamentary Bil recently introduced by the Frst Commissioner of Works for the appropriation o land for the extension of the Gallery indicates a recognition of the urgent need of the department in this respect.

OBITUARY.

Mr. John R. Hacking.

Mr. John R. Hacking, a Glasgow architect, who recently, in conjunction wit Mr. Graham Henderson, was selected a one of the ten architects to submit design in the final competition for the Mancheste Library and Art Gallery, has died a Helensburgh at the age of 29, as the resu of an operation for appendicitis.

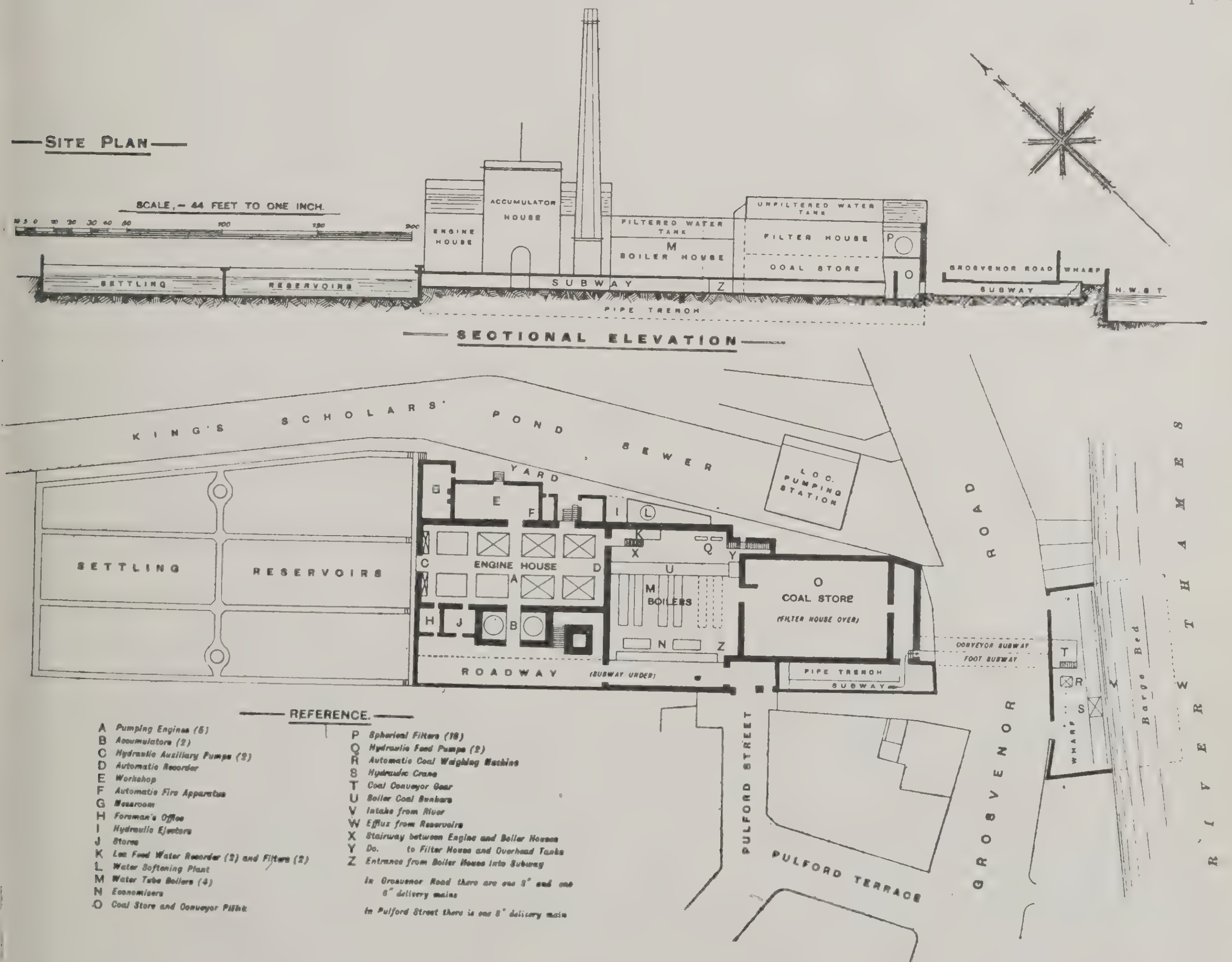
Mr. Alfred Bucknall.

The death is announced of Mr. Alfre Bucknall, architect, of Stroud. It was h who designed the Patti theatre a Craigynos Castle, and superintended th alterations which converted a countr house into a castle.

THE HYDRAULIC POWER COMPANY'S NEW PUMPING STATION.

An inspection was invited on Wednes- y week of the London Hydraulic Power ompany's new Pumping Station, a little the Grosvenor Road; a large and im- rtant installation. The Station, which s a frontage to Grosvenor Road and tends for a depth of 470 feet therefrom, mprises reservoirs for water settling, gine house, boiler house, hydraulic cumulator tower, coal store, filter house, ge overhead tanks, wharf and coal ndling plant, boiler feed water soften- ig and measuring plant, influx, efflux, d hydraulic pipe subway, with a sub- y under Grosvenor Road connecting pumping station with the river wharf, t gether with Resident Foreman's house, n's mess room, workshop, store room, f eman's office, and sundry appurtenances. e engine house is designed to receive ht pumping engines, five of which are eady erected. Each engine delivers the rate of about 28,000 gallons per ur into the main at a pressure of 800lbs. square inch. On each side of the main e rance doorway in the accumulator t ver are two hydraulic accumulators. e ram crossheads each carry a weight c ing containing about 150 tons of terial, which constitutes the load on hydraulic ram. The reservoir is d ided into six compartments, with a total h ding capacity of about 2¼ million gal- s. The method of construction adopted the ferro-concrete system. After being allowed time for settling, the water is drawn from the various compartments by the circulating pumps on the engines and delivered through the engine condensers into the overhead tank above the filter house; this water is then conducted through the filters, flowing thence by gravity into the clean water tank over the boiler house. The filtered water is then led to the pressure pumps on the main engines, with a gravity head, and pumped into the power mains for distribution. The coal store has a storage capacity of 1,000 tons. The three coal conveyors are driven by hydraulic Pelton motors. The coal is taken from barges alongside the wharf by a hydraulic crane and is automatically weighed and registered, and discharged by the gravity bucket conveyors either into any of the six compartments of the coal store or direct into the bunkers over the mechanical stokers in the boiler house, and fed through the measuring drums into the stoker hoppers, without any manual labour whatever. The whole of the accessory plant is operated by hydraulic pressure. Steam is used directly in the main engines only. The output from the station is at present connected with the distribution network of mains in the street by two 8in. bore and one 6in. bore pressure mains. The mains are automatically controlled in case of accident, the main affected being immediately isolated from the system without interfering with the general supply or power. There are at present about 173 miles of hydraulic power mains laid in London, and served by five central pumping stations from 2 to 3 miles apart. The supply is over 21 million gallons per week, with 6,787 machines and 221 fire hydrants connected.

The invitation to inspect drew together a large number of visitors, mostly engineers; the architectural profession was very little represented, which is a pity, for it is as well for architects to know how a system of hydraulic power supply is worked; in fact, it ought to be a maxim with the young architect that no kind of technical knowledge is useless to him, or may not turn out to be useful in some unexpected manner. And the mere spectacle of a great mechanical installation of this kind, with all its contrivances for using and economising power, is one of great interest. It is impossible not to be struck with the sight of the two great accumulators in cylinder form, each weighted to about 150 tons, vibrating slightly upwards and downwards as the demand on the pressure supply varies, and exercising a force equal to a head of water 1700 ft. in height. In case of the pressure becoming excessive, the accumulator automatically opens what may be called a safety-valve below, allowing some of the water to run off. The automatic safety-check for instantly cutting off the supply in a case of a supply main bursting is an interesting contrivance. There is an upright cylinder above the main (within the power house), a piston in which receives above it the pressure of the water on the power-house side of the main, and below it the pressure on the exit length of the main, so as to be held on a central position



NEW PUMPING STATION, GROSVENOR ROAD, LONDON, S.W., FOR THE LONDON HYDRAULIC POWER CO.
E. B. ELKINGTON, M.I.C.E., CHIEF ENGINEER.

between these two pressures. In case of a bursting main the pressure is at once taken off the under side of the piston, which instantly descends and cuts off the outer length of the main from the pressure system. When it is considered what would be the effect of the bursting of a main with a hydraulic pressure of 700 lbs. per square inch, the importance of this safety-valve will be appreciated. The whole installation is a fine example of the creation and control of water power for public use.

ENQUIRIES ANSWERED.

Assistant Surveyors, Ireland.

In reply to "C.H.L.V.," there is no fee for nomination, but an examination fee of £3. There are, however, little prospects of an examination in the near future, the list of successful candidates at the last exam. (some 12 months ago) having been extended.

Book on Dairy Planning.

V. W. M. (Bourne) writes: "Please recommend a book on dairy planning."

—We do not know of any book on dairy planning, but Mr. B. T. Batsford, 94, High Holborn, informs us that there is a slight reference to the subject in Clarke's "Farm Buildings," 6s. net.

Fees for Quantities where Work is not Carried Out.

ENQUIRER (London, S.W.) writes: "I understand that if a building is not erected after the necessary drawings and quantities are prepared, the architect is entitled to half his commission for his part in the work. Will you kindly inform me what proportion of his fee the quantity surveyor is entitled to under similar circumstances?"

—The quantity surveyor has fully completed his work, and should be paid in full; provided, of course, that he has prepared the quantities by the direction of the "employer." See Schedule of Professional Charges, settled by the R.I.B.A. in the Conference of 1898. F.S.I.

Identification of Woods.

H. P. (London, S.E.), who sends two samples of wood for identification, is informed that the samples sent are far too small to give a reliable opinion upon. The polished strip is quite useless for the purpose. The small square sample has many of the characteristics of one of the Mexican mahoganies, known as Caoba, but as stated above, the sample is too small to be sure about. Samples for identification should not be less than 3ins. wide, ½in. thick, and 4ins. long for the usual observation tests. Smaller specimens require expensive laboratory tests for all except the common kinds of wood. There is no such wood in commerce as "English teak," and whatever the sample may be, it certainly is not teak.

G. ELLIS.

Buildings to Measure near Halifax.

S.W.A. (Elland) writes: "What buildings within twenty miles of Halifax are suitable for measuring?"

—The querist would have helped if he had stated his particular purpose in measuring, but he may find the following notes of some use. Adel Church is a very complete example of a Norman Church. There is a perspective sketch in Bond's "English Church Architecture." There is good work at Kirkstall Abbey, near Leeds, at Bolton Priory, or Wakefield Cathedral; (at Wakefield there are also some old houses, and the Bridge Chapel, restored by Scott). Kildrick Church is of 13th century date; in the same village are a seventeenth century grange and hall. St. John's Church, Leeds, c. 1624, is of great interest, and contains some of the finest Jacobean fittings in the country. Riddlesden Hall, near Keighley (16th century), Temple Newsam (temp. Chas. I.), or Woolley Park (17th century), are all mansions worth study.

Projecting Fascia and Gutter as Encroachment.

B. L. (Wales) writes: "The outline sketch enclosed [not reproduced] shows the end elevation of a house built on a plot of land leased from an estate company. The walls of the house on this side are built in a direct line with the garden wall, and form the boundary of the site. The plans for the house were submitted to the surveyor to the estate, who approved of same. The house is built, and the surveyor made complaint owing to the fascia board and gutter being fixed overhanging the wall (although fixed tight to the wall), and threatened to charge extra ground rent for the strip of ground covered by the gutter, or to take a strip of land 6in. wide from our boundary on the other side. Is this legal? Can we be forced to alter same? Ought we not to have been notified at the time when the plans were approved? The surveyor says we ought to have set our wall in 6ins. to allow for the gutter. This would have formed an awkward break in a wall, half of which might possibly be disposed of should a house be built adjoining."

—The projection of your fascia board and gutter is, of course, an encroachment upon the neighbouring property, and the owner of that land possesses the right to call for its removal, or in default may remove it himself, or enter an action against you in respect of the damage sustained by reason of the trespass. I advise you to come to terms with the surveyor to the building estate at once, either taking a narrow strip of land to cover your encroachment or paying a small acknowledgment rental for it. The fact that the plans were submitted and approved has nothing to do with the matter; it was, no doubt, presumed that you only intended to build on your own land. F.S.I.

BONDING LAYERS OF CONCRETE.

The problem of securing a perfect and durable bond between successive layers of concrete is one of which every cement worker realises the importance. Special interest therefore attaches to the reported development of a new method of accomplishing this desired object. It is the discovery of Mr. J. A. Jamieson, of Montreal, and is said to have been employed with highly satisfactory results in a variety of work, including the construction of a reinforced concrete elevator and a reinforced concrete conduit 10½ft. in diameter and 8,000ft. long, working under 33ft. head.

The surface of the concrete, approximately horizontal, is allowed to stand until water which may have flushed to the top has disappeared. When this result is attained, and while the mass is still moist, the entire surface is covered with a 1 to 1 dry mixture of cement and sand, to a thickness of about ½in. If necessary, this is protected with tarpaulins or boards. The moisture on the fresh concrete produces a partial set in the dry mixture. This is true of the particles in direct contact with the green concrete, the effect diminishing rapidly and the upper portion of the dry mixture remaining unaffected. The next layer of concrete is applied without removing the dry layer, the moisture in the fresh concrete completing the set through the half-inch dry layer, and producing a decided bond of the two courses. It is stated that briquéttes made of cement mortar in two parts and joined by this method, developed a strength more than half as great as others made of the same material in a single piece. This would seem to be quite a satisfactory test.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS OF GREAT BRITAIN AND IRELAND.

The half-yearly general meeting of this Federation is being held in the King's Hall of the Armstrong College, Newcastle-on-Tyne, to-day, July 26th, opening at 1 o'clock in the forenoon, when the Deputy Lord Mayor of Newcastle receives the members. Among the more important items on the agenda are recommendations of the Council (who held their meeting o the previous day) with respect to Federation finance; the advisability of creating special type of Colonial membership i order to provide for the affiliation of th South African Federation; the desirability of becoming affiliated to the Internationa Federation of Building and Public Work Contractors; the position of builders wit regard to the National Insurance Bill the lead-poisoning enquiry; a proposal t amend the National form of contract, etc

The official programme of the meeting is as follows:—

Tuesday, 25th July.—10 a.m.: Executive Council meeting in the County Hote (Prince of Wales Room). The Lor Mayor welcomed members of the Counci 1.30 p.m.: Lunch at the County Hotel (t members of the Council). 2.30 p.m. Assembled at County Hotel for sail dow the river or visit to the works of Messr Armstrong Whitworth and Co. 7.30 p.m. Banquet at the County Hotel, evenin dress optional. Invitations for the banqu were issued from the office of th Northern Counties Federation to thos who signified their intention of attendin the meetings.

Wednesday, 26th July.—10 a.m.: Reception at the Armstrong College (King Hall) by His Worship the Deputy Lor Mayor (Councillor C. S. Shortt). 10.1 a.m.: General meeting at the College. p.m.: Lunch in the Commons Room, Armstrong College (to delegates at the meeting). 4 p.m. to 6 p.m.: Reception at th Banqueting Hall, Jesmond Dene, by th President of the Northern Counti Federation. Afternoon tea.

Thursday, 27th July.—Picnic by mot char-a-banc to Blanchland, Hexham a Chollerford, for the Chesters, lunche and tea en route.

A dainty little brochure, prepared, w believe, by Mr. W. H. Hope, solicitor, wh is secretary of the Northern Counties Federation, contains the full programme of t meetings, a street plan of Newcastle, portraits of the president and secretary of t National, and of a dozen promine northern officers, and an itinerary of t excursion.

A report of the proceedings will appe in next week's journal.

A. VISIT TO HILL HALL, ESSEX, AND ST. JOHN'S, EPPING.

Hill Hall, Essex, was visited by the rchitectural Association on Saturday, Jy 8th. In the parish of Theydon Mount, not far from Epping Forest, the house, standing on a hill, occupies one o the finest sites in Essex.

A house stood here before the Conquest.

An ancestor of the present owner, one S Thomas Smith, a famous Essex man, built the house in 1557, and in 1568 began to rebuild the north and west sides o the house. After the death of Sir Thomas, his nephew continued the work, wch, unfortunately, has been continued i later years with rather unhappy results in the case of the internal court, ring the date 1815.

The early Georgian cloak which now ers the building is perhaps coarser in ail, the columns of the east front giv- the impression of buttresses on account of the exaggerated entasis; yet the ect is homely, not cold and cheerless as h many a great house. The south nt, with its terrace and bold wings, is st pleasing. Graceful urns are placed at intervals along the terrace wall, and mounting the piers quaintly sculptured amanders. The salamander crest was ed to the arms by old Sir Thomas.

The materials used are red bricks, tne, and cement, the dressings to the dows are in cement—a common feature Essex work; but, for all that, rather be deplored in that it is unworthy of ne house.

he plan is a square with a large inal court. The interior contains many rooms of the Queen Anne and Georn periods. The staircases are fine mples of the period. A small piece f he fine old Elizabethan staircase has en refixed in the nursery.

he great hall has suffered restoration. eal improvement has been made by oving the Georgian chimneypiece, ch formerly stood inside the original Unfortunately the screen has been oved and columns painted to imitate ble take its place. Similar columns the place of the panelled piers which supported the gallery.

ill Hall is a veritable storehouse of sures. One room, used as a store, ains a miscellaneous collection of fure, mirrors, etc., of many styles and ods.

ne Venetian room on the ground floor charming low room with painted ls, ceiling beams, florid and rich in ur, but harmonious.

ne rooms on the first floor are decod most delightfully in many styles. tian furniture and decoration is much ured; one room, hung with a dull n tapestry of exquisite design, and conng a magnificent bed and furniture in style, is truly a noble apartment.

ne Georgian chimneypiece removed the hall is placed in the main cor- on the first floor. Mention must ade of the fine day nursery on the d floor. The timbers of the roof a quaint little recess raised a few , with balusters, newels, and hand- copied from the old staircase, the remaining portion of which leads to ight nursery.

aving Hill Hall, the party paid a visit to the Church of St. John, ng, designed by the late Messrs. Bodley and Garner. The tower, a fine piece of Gothic work, has lately been erected. The vestry forms the ground floor of the tower, connected with the church by a low corridor. A fine effect is obtained by four deep arched recesses in the vestry on two sides, pierced for light. A large Renaissance clock on a wooden bracket is an external feature.

A SUSSEX COTTAGE HOSPITAL.

The King Edward VII. Memorial Eliot Cottage Hospital, Haywards Heath, the foundation stone of which was laid on July 11th, has been planned upon up-to-date and approved principles, and the fullest advantage has been taken of the conditions of the site. It has been sought as far as possible on so small a scale to obtain the various advantages of what is known as the "Pavilion system" in hospital planning—the chief and most obvious being that light is secured on three sides of the min wards, and in consequence thorough cross ventilation is obtained.

The hospital will provide 12 beds disposed in four wards, each of which is entered from the main corridor on the ground floor. These wards are each amply lighted by sash windows, while at the ends of two main wards of 4 and 5 beds respectively double casement doors lead on to the verandas having a southerly aspect.

The heating of the wards will be by means of open fireplaces of suitable hospital type, special ventilating flues being provided. Connected with the wards are sanitary spurs which will be thoroughly cross-ventilated.

The bathrooms which open out of the main wards are to have baths of the swing type, so that the position of the bath when in use may be that most convenient to nurses and patients. The portions of the hospital last described, as also the operating room, etc., will have patent jointless flooring which may be easily washed down at any time. The operating room will be well lighted by a specially designed window on the north side. A recovery room adjoins. A nurses' duty room, containing a stove, sink, food cupboard (ventilated), dresser, etc., is placed off the main corridor on the north side in a position as nearly as possible equidistant from the main wards. A large store for patients' clothes, and suitable heated linen cupboards are also provided.

The administrative portion of the hospital, the entrance of which forms the central feature of the main front, contains an entrance hall, staircase, nurses' dining room (which will serve also as committee room), and matron's sitting room on the ground floor, while upstairs are bedrooms, of good size and well lighted, for the staff, with bath room, linen room, box rooms, etc. The kitchen offices consist of a kitchen, scullery, two larders, pantry, matron's store, etc., conveniently arranged on the north side of the hospital. The tradesmen's entrance is placed in close proximity to a new roadway which is being formed along the eastern boundary of the site between the Hospital and the adjoining Almshouses. A heater chamber, coal store, tool house, etc., is placed under the scullery, etc., advantage being taken of the natural fall of the land to secure this.

The architectural treatment of the building is simple, the materials externally employed being bricks of a pleasing plum colour, carefully selected stone from Sir William Grantham's local quarry, and kindly presented by him to the hospital, being used for dressings and largely in the central bay of the front elevation. The roofs will be covered with carefully selected sand-faced tiles.

Internally, all angles, both horizontal and vertical, are rounded—elaborate mouldings are avoided, and all materials have been selected with a view to cleanliness. The walls to wards, etc., will be finished in washable sanitary distemper, while in bathrooms, etc., and around sinks, tiles, and washable enamel will be used as required. The architects are Messrs. Frederick Wheeler and Godman, of Bank Chambers, Horsham; the builder being Mr. Horace Finch, of Haywards Heath.

DEMONSTRABLE EFFECTS IN DECORATION.

The difficulty of forecasting, with anything approaching to accuracy, the effect of a colour scheme for interior decoration is experienced even by the professional decorator, while the client, who usually has a good deal of influence on the choice of colour combinations, is usually much surprised, sometimes agreeably, and sometimes quite otherwise, by the effect *in situ*. It is, in short, an affair in which there is commonly too much of the speculative element. It is easy enough to obtain a harmony of colours; but the point is not so much how several colours will look in juxtaposition, but what will be their combined effect on the room in which they are placed, and some easy means of ascertaining this to a nicety would be of immense advantage. An ingenious device for accomplishing this object has been adopted by Messrs. Thos. Parsons and Sons, the manufacturers of high-class varnishes, colours, and enamels. Printed on transparent celluloid is a photographic view of a portion of a room, showing door, window, fireplace, dado rails, floor coverings, and a few elegant appointments. The walls, of which portions are in bright light, and portions in different degrees of shadow, are left bare. The picture of this dainty interior is mounted on stout card, arranged to receive, one at a time, a series of cards, on each of which is a decorative scheme, comprising, in each case, in the sample before us, three different tints of Endelflat, for dado, filling, and frieze. These combinations are in themselves valuable in suggestion; but it is surprising how greatly their effect is enhanced when the colours, thus arranged, are slid behind the transparency and assume their appointed places in the room. One then sees the room exactly as it would appear if the combination shown on the cards were actually applied to the walls; the lights and shadows already mentioned forming an important factor in the general effect, and one that is often perforce neglected in ordinary attempts to solve the problem. Here, however, we see with close approximation to exactness, how the respective colours appear when fully lighted and when sobered beneath more or less obscurity. It is a revelation in colour values, and affords a most convincing and satisfactory demonstration of the artistic effects obtainable with Endelline and Endelflat; while the same colours can also be supplied in Parsons's Endelline enamel.

GERMAN BUILDERS' EXPERIENCE OF NATIONAL INSURANCE.

Among the useful and interesting documents that, following an admirable precedent which is always observed on such occasions, the secretary of the National Federation of Building Trades Employers has produced for the information of members at the half-yearly meetings, which are being held at Newcastle-on-Tyne this week (Tuesday and Wednesday), there is one in which have been collected and digested the replies to an enquiry addressed to the German Employers' Federation for the Building Trade. In the original document, the questions and the answers were grouped independently, but it will here be found more convenient to put the answers to it immediately after each question:—

1. *Has compulsory insurance worked well for workmen and employers?*

A. Dr. Froebner, architect and master mason, Behrens, Hanover: Materially speaking, beneficial to the workman; may also benefit employers by giving them a better insight into social problems, owing to their active share in the management of the scheme

B. Herr Brion, building contractor, Strassburg: Has no doubt benefited the workman; and the contractors have benefited indirectly by the improved social outlook of the men.

C. Herr Heil, building contractor, Kaiserslautern: More to the advantage of the workman than to that of the employer.

D. Herr Luscher, architect, Frankfort: For the workman, yes; for the contractors only so far as they were formerly self-insurers.

E. Herr Mayer, architect, Freiburg: Favourable for the workman, but, on account of the expense, not for the employer.

F. Herr Rank, architect, Munich; *G.* Herr P. Lauffer, mason, Konigsberg; and *H.* Herr Enke, Leipzig, Chairman of the German Building Employers' Association, all say laconically "Yes."

I. Herr Thiemann, architect, Cologne: Very good for the workman. No complaints are now heard from the employers. Compulsory insurance represents a great social step forward.

J. Hamburg Building Co.: For workmen, yes.

K. Herr O. Grote, joiner and mason, Halle: Has worked well for both sides.

L. Herr A. Niess, joiner, Brunswick: Compulsory insurance has not worked well for either masters or men. Not for the workmen, because they are taught by the Social Democrats and by a too easy administration to look upon the payments made by employers for accident and sickness insurance, only as a deduction from the workers' share of the products of their industry. It is therefore assumed by the men that the employers are only returning a part of what they have taken from the workers. So the workers consider it a libel to speak of the compulsory insurance law as a benefit. On the other hand, the employers under these circumstances, can hardly look upon the payment as a blessing having regard to the number of compulsory accounts, the number of undeductible expenses, and the number of unfulfilled promises. Only in one direction has the compulsory insurance worked a benefit, namely, in transferring from the Poor Law Authority to the Insurance Administration the case of those workmen who through accident fall into poverty. The compulsory insurance bears in another direction very hardly on the employers, because the small employers are taxed in the same class as the large ones, and further because the tax has to be paid even when the trade is yielding no profit, and so becomes a charge against capital, thus reducing the capacity of the employer to continue his business. These things are not yet fully appreciated by the German employers.

M. Association of Employers, Masons, Joiners, and Builders of Brandenburg: Only beneficial to the workmen, not for the employers, for whom it is a serious burden. It has caused an estrangement between employers and employed.

2. *Has it markedly increased the cost of its production? and if so, to what extent?*

A. Cannot be answered with exactitude.

B. Without doubt. Accident insurance costs 2 per cent., sickness insurance 3 per cent., and invalidity 3 per cent.—total 8 per cent. of the wages paid, equal to 6 per cent. of the cost of production. The building trade, however, suffers but little from foreign competition.

C. Since the passing of the Compulsory Insurance Act, 1885, considerably higher.

D. Yes, about 4 per cent.

E. Yes, equal to about 5 per cent. of the wages.

F. Yes.

G. There is no marked increase of the cost of production. The increased cost is so small that it is hardly possibly to express it in percentage.

H. Yes. For sickness and invalidity insurance about 1 per cent., and for accident insurance about the same.

I. For a 60 pfennig hour-rate we have a tax of 18 pfennigs per week, to bear which is equal to an increased cost of 6 per cent. per week.

J. Yes.

K. The raising of the cost of insurance is in the last analysis an offset against imprisonment, which is prevented by compulsory insurance, and amounts to 3 per cent. The circumstances very seldom permit this to appear as an increased cost of production, but rather as a reduction in the profits, because the selling price of the product cannot be uniformly fixed by the German contractors so as to include the cost of compulsory insurance. On the contrary, the selling prices of goods are fixed by the prices ruling in the world markets, that is to say, by the nations who have no compulsory insurance (Japan, China, India, Persia, United States, Canada, Central America, South America, Africa).

L. Yes, about 10 per cent.

M. The total cost, including the necessary clerical and other services, is about 5 per cent. of the wages paid.

3. *Have many cases of malingering or simulation of illness occurred?*

A. Much; so that one must record with sadness some consequent demoralisation of the workman.

B. Not really much, but nevertheless, a considerable number of cases occur, some knowingly, some unconsciously, of a simulated character, or unduly aggravated—e.g., lowering of the resisting power, too easy acceptance of and too much attention to small illnesses (neurotic tendency sometimes), desire for an income and consequent putting off the resumption of work, in short, a steady decline of the sense of moral responsibility.

C. Yes; principally in the winter time.

D. Yes, sickness, especially in winter through want of work, and also in cases of accident.

E. Yes, especially in slack times, or in winter when nothing is doing, there is much simulated illness, which costs the insurance fund dearly.

F., *H.*, and *I.* No.

G. Towards the end of the building season, when men are put off, many ask for a sickness note, and express themselves as sick. In most cases this sickness is merely feigned with the object of obtaining sick pay. During lock-outs or strikes the control of the sickness fund is not sufficient, whereby the workmen's unions are spared considerable outlay.

K. Compulsory insurance has encouraged among the workmen a desire for sickness or invalidity rents; they do not want to get well again, but prefer to remain rent-receivers, consequently one of the most marked features of compulsory insurance is the increase of simulated illness in all directions.

L. Yes, the cost has enormously increased through the growth of simulation among the workmen.

M. I think a few cases have occurred, but it is not common.

4. *Do the German contractors desire the repeal or amendment of these laws?*

A. Under existing political conditions, no one would suggest the repeal of these laws

B. Perhaps the amendment of certain parts of the law, but it does not seem worth while to repeal it.

C. In this the contractors cannot help themselves.

D. No.

E. The repeal, no; rather a simplification of the law by which considerable sums could be saved.

F. No.

G. It is to be desired that the law should be so amended that the chief control should not lie, as now, in the hands of the Social Democratic Unions.

H. Retained, and made more consistent.

I. No, even though the cost of insurance is so heavy.

J. No.

K. When the German employers were faced with the question of compulsory insurance, they wished the law to be differently designed, and the working of the unpleasant side of the matter considered and amended. Unfortunately, the Imperial Parliament and the Government rejected this request entirely. The question was decided on party lines, with but little regard to the effects to be expected from the Bill. Had this not been so the compulsory insurance law would have taken a very different form and worked much better. Generally, few voices have been raised in favour of repeal, but many complaints have been made as to its working. The majority of the employers hold the opinion that the better overseeing capacity of the employers ought to be brought into the management of the Acts, since the workmen cannot be trusted to supervise its administration thoroughly.

L. Repeal impossible, though it would be to the interest of employers, because the cost of production is increased without there being any possibility of getting the extra cost back again, hence the profits of the employers are by so much reduced. We can understand that in consequence of this insurance, the attentiveness of the workman is less, and they become less careful because insured

M. No.

5. *Are they for or against insurance against unemployment, in particular for or against the reimbursement of the cost of such insurance by State contributions or by contributions from contractors and workmen?*

A. Fundamentally against the introduction of unemployment insurance so far as merely favouring it goes; the reimbursement of the cost should only be by contributions from the workmen, and to in some minor degree also from the employers.

B. In principle I am for unemployment insurance, but I am very doubtful that a method can be found which will properly apportion the burden. Besides, the misuse of this kind of insurance must be carefully excluded. In no case could it be a question of the employers contributing, only the workmen, with eventual help of the State.

C. Against, especially in the event of the cost falling upon the employer.

D. Against. The cost should be borne by the insured, since these are often the cause of the want of employment. Also because with that would fall the last ethical principles of "fending for one's self."

E. Against unemployment insurance, because through it laziness receives a premium. Even if the building trade was busy enough, it could afford but little unemployment pay. If, however, unemployment insurance were necessary, or were deemed to be advisable in order to relieve the State from poor law expense, unemployment insurance should be the affair of the State and of the community. In no case ought the cost to fall upon the employers, not even in part.

F. Against any kind of unemployment insurance.

G. Unemployment insurance is a good and suitable contrivance.

H. Against, as going too far in the direction of socialism, and as tending to lower the moral tone in the ensured.

I. Against, because it is in principle a premium on laziness. If it is adopted, those who desire the benefit should bear the cost. Because of the increased wages rates, the workmen can easily bear the cost. They are very freehanded and ready to bear burdens when it is a question of their party or union funds.

J. Against.

K. Against. Without doubt such a question would demand very serious consideration, because certainly unemployment insurance would encourage laziness and lead to much deception. The best elements among the workmen would protest strongly against unemployment insurance if they were to have the cost deducted from their wages. They already regard work as a scourge.

L. Against, because it would be a premium on laziness. At any rate it should be at the cost of the workmen, who would thus bear any fresh charges they laid upon the Fund.

M. This question has not been considered. Probably the employers would be for the cost to be borne by the State.

It must be remembered in reading the answers to the questions that there is no unemployment insurance law in Germany; and the obvious inference from the testimony about simulation is that sickness and invalidity and unemployment insurance must go together. The thing to be regretted is that accident insurance is not to be part of the same scheme, instead of, as it is, on different line entirely.

CARDIFF AND DISTRICT BUILDERS ASSOCIATION.

The quarterly meeting of the above associatio was held at 22, Castle Arcade Chambers, Cardiff, o June 30th, when Mr. W. T. Morgan, the president occupied the chair, and there was a large attendance of members.

The secretary read correspondence with the Cler to the Llandaff and Dinas Powis Rural Distric Council, from which it appeared that the Counci were not prepared to submit to the association copy of the proposed new by-laws before same wer open to public inspection. The secretary also rea a letter from the Sheffield Master Builders statin that in that town the sub-committee appointed b the Council had requested the master builder association to submit their observations on the by laws in the earlier stages, long before the forma advertisement was inserted, and the matter was di cussed. It was resolved that the secretary wri to the Council expressing our disappointment tha we had not been given an opportunity of conside ing the proposed by-laws before they were throw open for public inspection.

With regard to the depositing of building agre ments, it was resolved, after hearing report of n gotiations as to one of the largest estates in th city, to ask the principal agent to receive a deput tion.

Delegates to the last meeting of the Chamb of Trade reported a resolution to approach the g company on the question of the price of gas.

Government Insurance Scheme.—Some of the pr visions of this Bill, as they would affect builde and property owners, were discussed, and the secr tary read a letter from Mr. T. H. Price callin special attention to Clause 51, and also a lett which had been prepared by the Cardiff Mast Builders' Association to be forwarded to Sir Ninia Crichton Stuart, the member for the city, settin forth their objections to the Bill. It was resolve that we join with the Master Builders' Associatio in their objections to the Bill on the grounds stat in the letter.

It was resolved that all the yards be closed duri the first three days in Bank Holiday week August.

It was resolved that no meeting be held duri the month of August.—I. Watkins, Secretary.

COMING EVENTS,

Wednesday, July 26, and Thursday, July 27.

National Federation of Building Trades E ployers of Great Britain and Ireland, Koh-i-No House, Kingsway, W.C.—Half-yearly Meetin Newcastle-on-Tyne: General Meeting (Wedn day, 10 a.m.), in the King's Hall of the Armstro College; Lunch (Wednesday, 2 p.m.), in the Co mons Room, Armstrong College; Excursions, et on Thursday.

Saturday, July 29.

Institution of Municipal Engineers, 39, Victo Street, S.W.—Annual meeting of the Eastern I trict, Goode's Hotel, Marine Parade, Yarmouth.—Astley Norris on "Construction, Maintenance, a Repair of Highways." 2 p.m.

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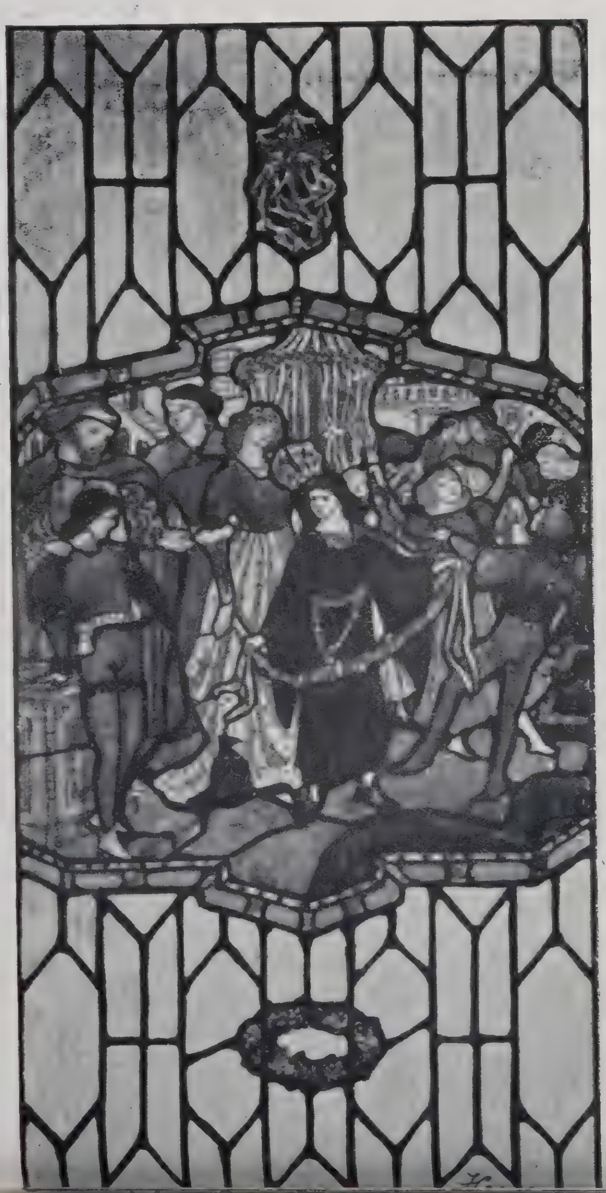
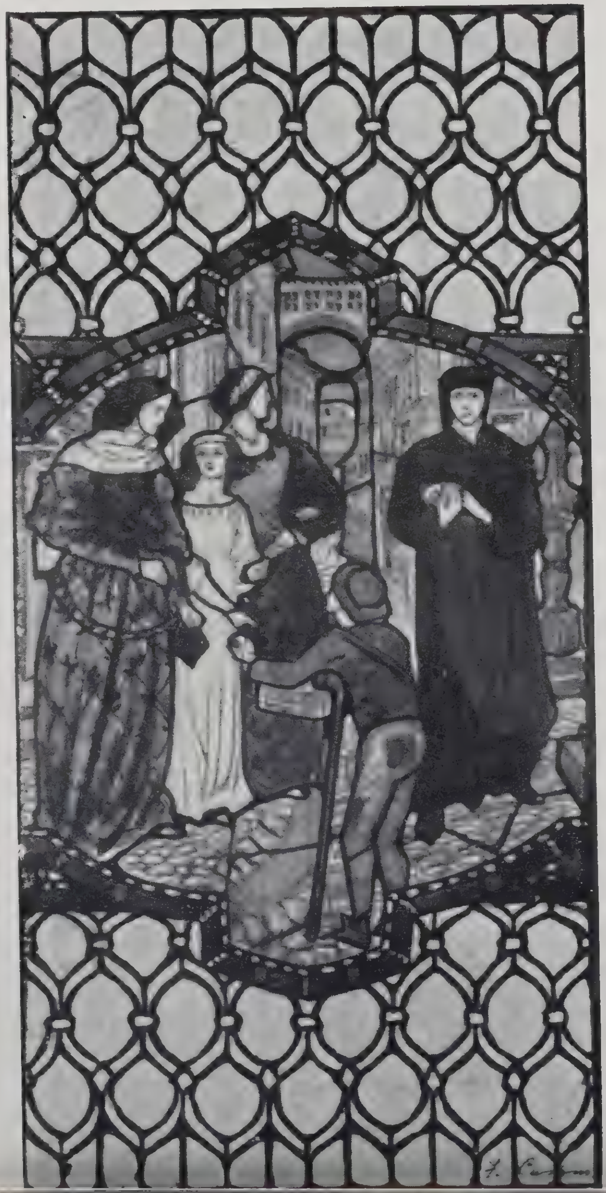
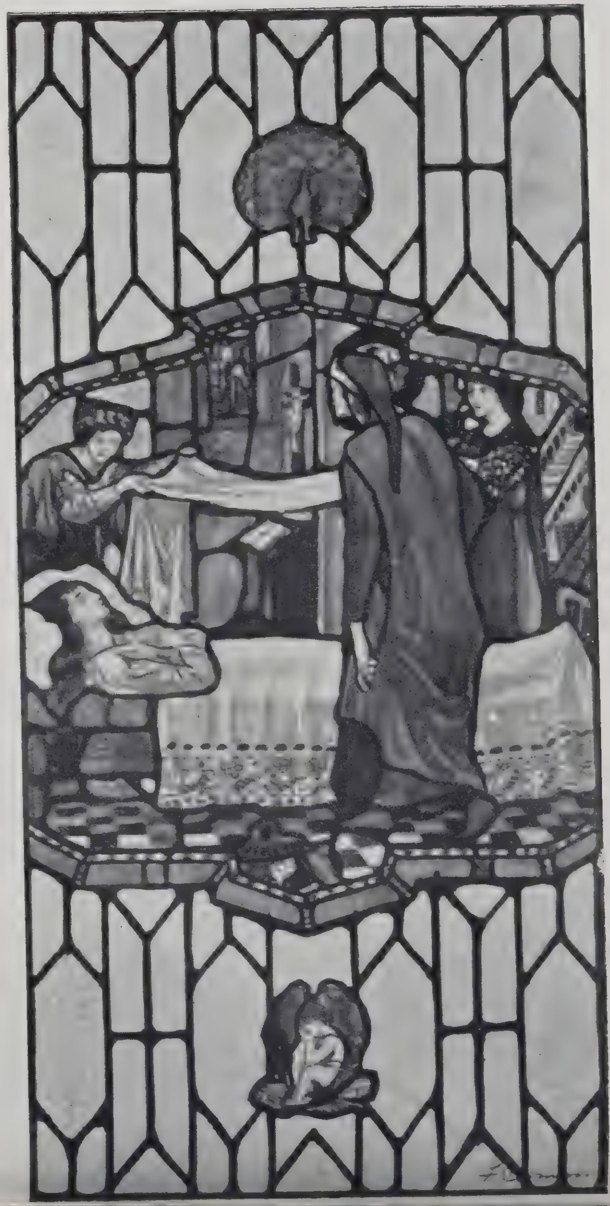
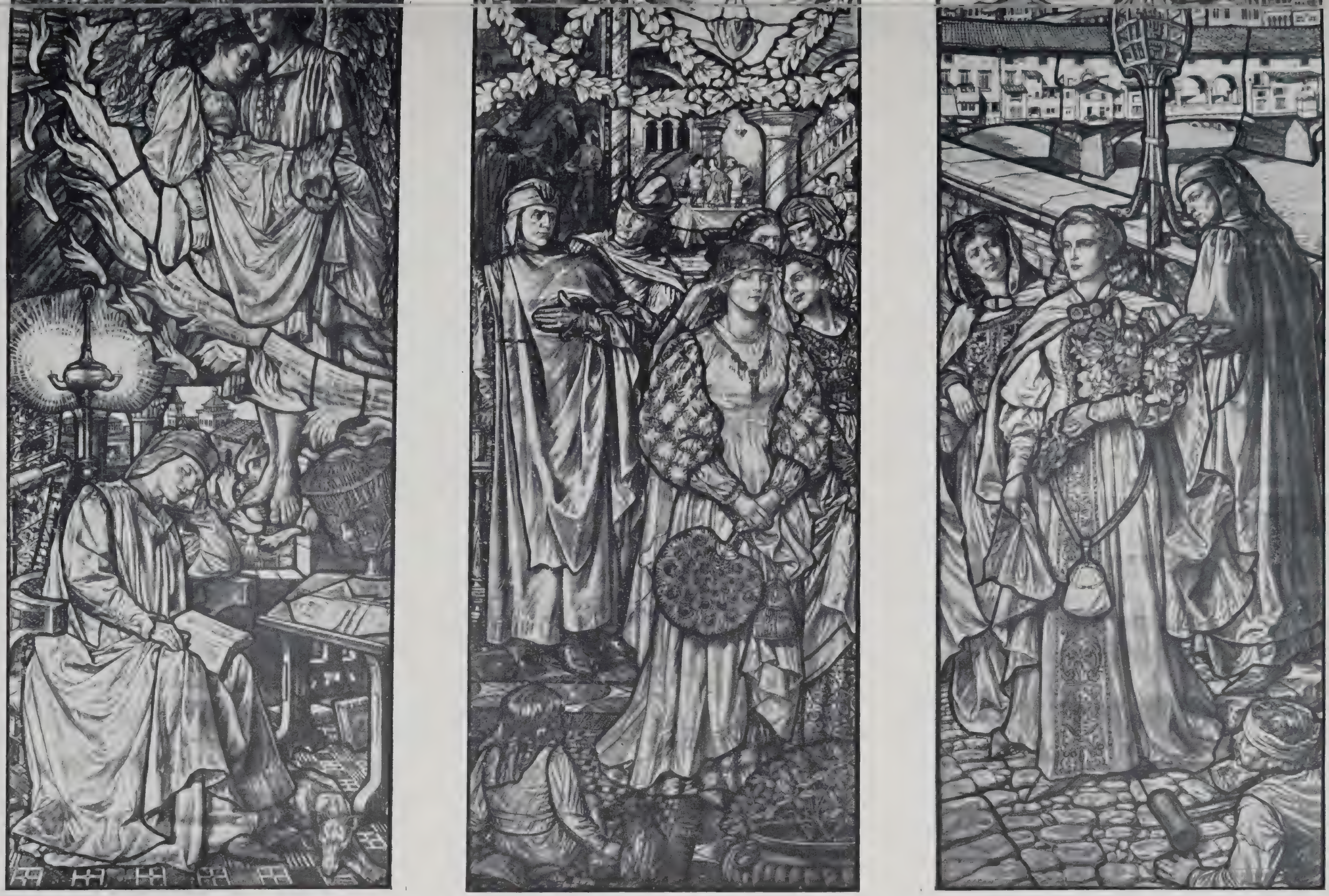
Supplement to The Architects' and Builders' Journal, *Wednesday, August 2nd,* 1911.









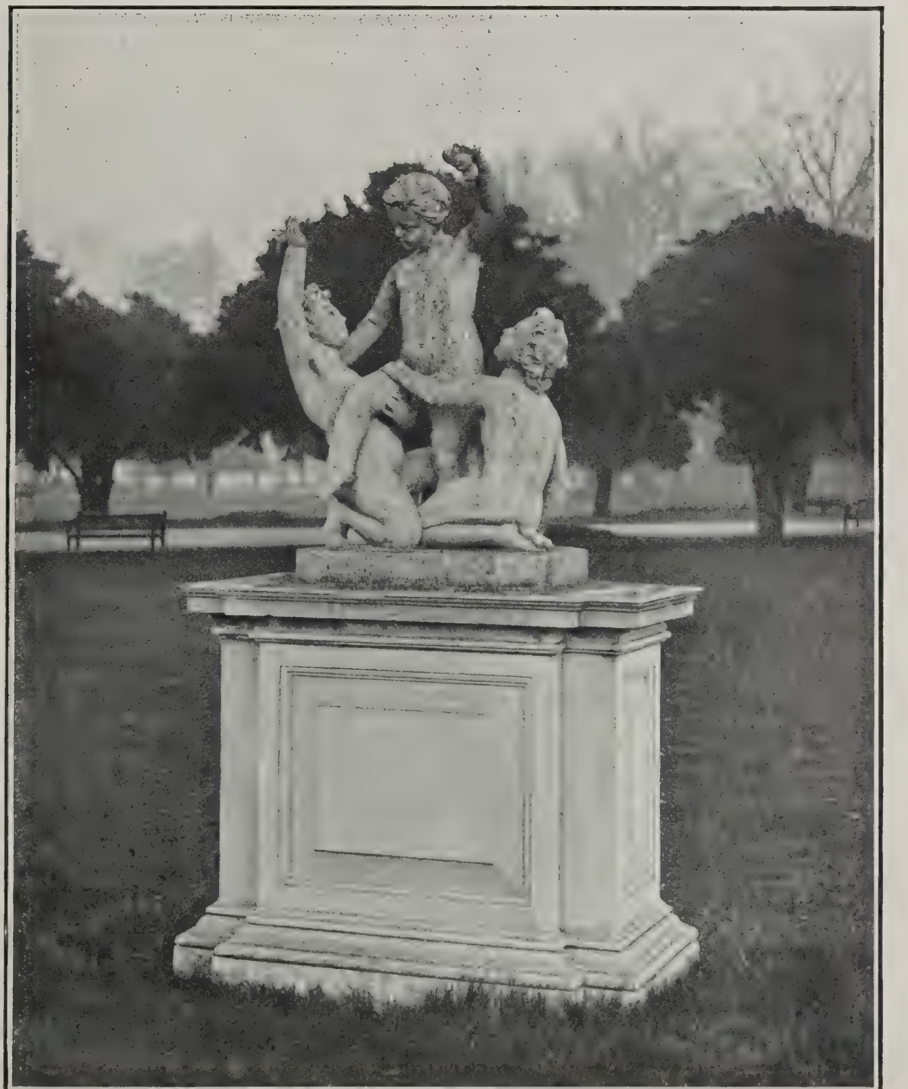
SIX-LIGHT WINDOW IN THE ENGLISH HOUSE AT THE TURIN EXHIBITION, 1911

DESIGNED BY FLORENCE CAMM.

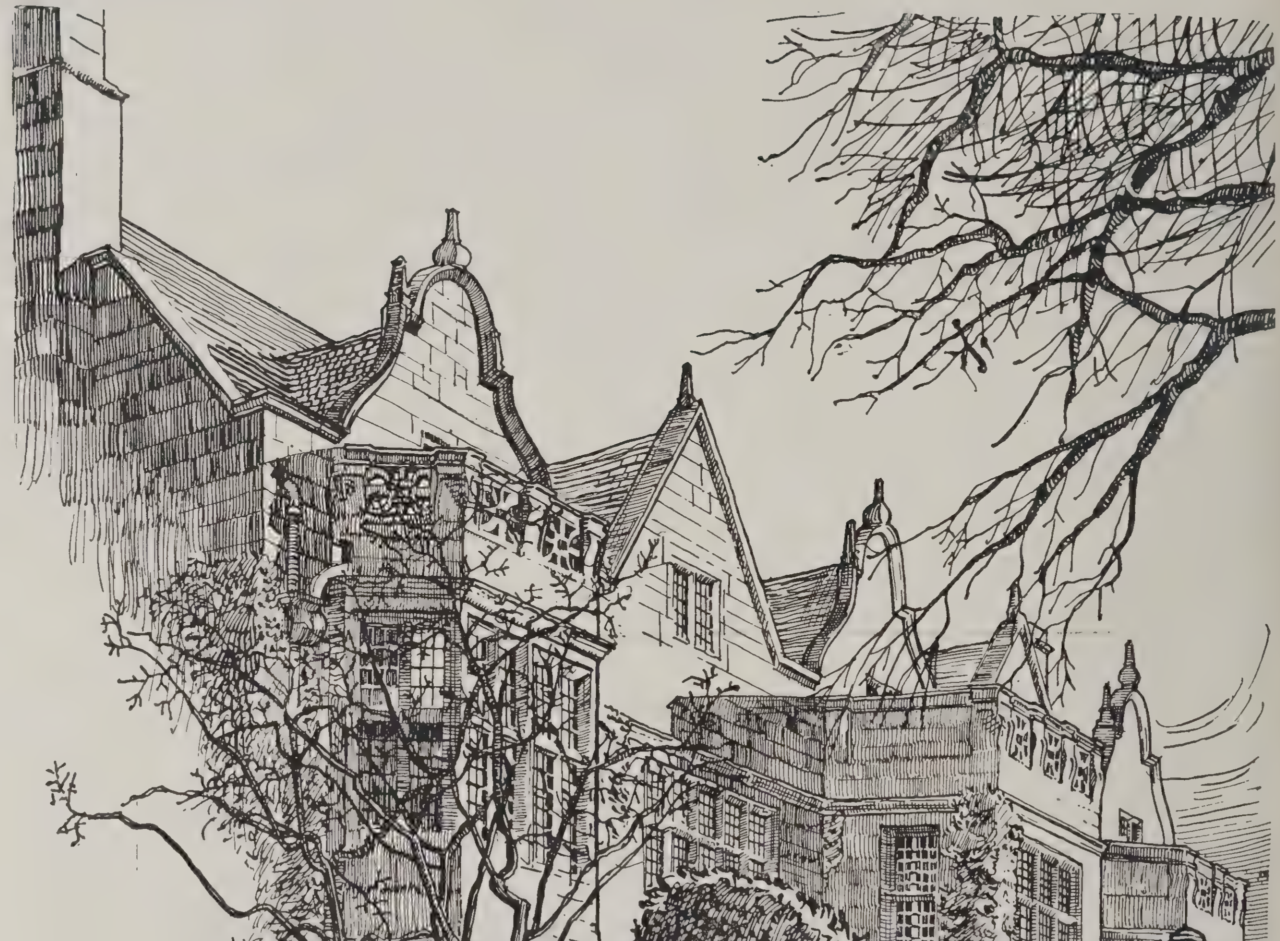
THE ARCHITECTS' &
BUILDERS' JOURNAL.

WEDNESDAY,
AUGUST 2nd, 1911.

Volume XXXIV. No. 862.



GARDEN STATUARY AT HAMPTON COURT.



(See "Holiday Sketching," page 109.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

AUGUST 2nd, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 862.

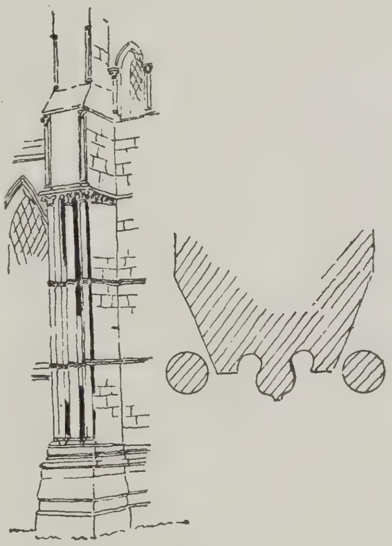
NOTE: The List of Contents will be found on page IV. of the front advertisements.

Holiday Sketching.

IT is one of the advantages of being an architect, and more especially of being a young architect, that instead of his daily avocation being a thing to escape from and to lose all memory of when on a holiday, it furnishes, to the real lover of his art, an additional pleasure and interest to the holiday; a pleasure mbined, too, with useful self-instruction and the establish- ent of a booklet of interesting records. Even apart from etching, the knowledge of architectural style and history ikes all the difference, in the visit to an old town, between e man who is merely anxious about the comfort and com- rative economy of his hotel, and the man who is looking rward to seeing and examining with his own eyes some mous old church or town hall which he has hitherto known ly in more or less reliable book illustrations. Sometimes, deed, the reality brings a little disillusion; enthusiastic illus- tors are guilty occasionally of conveying an exaggerated idea the scale and picturesque effect of a building. We can rdly fancy, for instance, that anyone who has seen the merous published illustrations of the Hôtel Bourgtherolde Rouen has not been somewhat disappointed at the sight of actual building, with its modern shops on the ground floor, d its general scale not coming up to the impression given many of the illustrations. More often, however, the result in the opposite direction; the building proves better than illustrations. One has only (to recur to the instance just ned) to turn one's back on the old Hôtel and face the hedral to realise this in one case at least. What illustration given an adequate idea of the multiplicity of that west nt? What illustration has ever done justice to Rheims or coln?

hen, besides the great and well-known buildings, there he interest, in a town, of hunting up for oneself something t is not well known, but is worth consigning to the sketch- k; and in country walks there is the quiet picturesqueness a cottage or a farmhouse, with some unusual character about to be noted and sketched; not, it is to be hoped, for exact tation in any of the sketcher's own commissioned works, as something which it is interesting to preserve, which, n without imitation, is an influence on one's taste and feel- in carrying out small country buildings; and the sketching which at all events is a pleasure in itself.

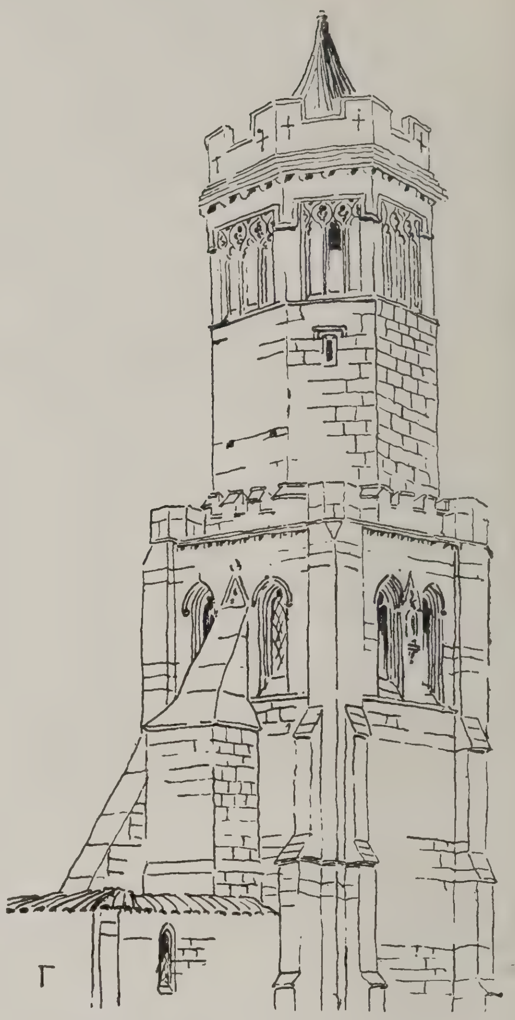
he serious study of ancient buildings is of course most roughly carried out by the production of measured draw- s and details; it is by this means that we get at the full blem of its design and construction. But the measuring of an important building may perhaps be regarded as rather serious and arduous work for holiday sketching; it is a l of work to be undertaken as a part of architectural edu- on under special circumstances and for a special induce- t, and is hardly compatible with the relaxation of mind the freedom of movement from place to place which are part of the elements of holiday-making. We may fairly regard holiday sketching as implying the lighter and more artistic occupation of perspective sketching of buildings or parts of buildings, not excluding, however, the investigation and record of such details as the profiles of mouldings, which go to explain how the appearance sketched has been produced, and which may be obtained by the eye and the assistance of a two-foot rule sufficiently to tell their tale. This buttress from one of the East Transept chapels of Lincoln, for instance, shows an assemblage of perpendicular lines on the face, the composition of which is not at once evident to the eye, nor can be exactly explained on the sketch; but the enlarged plan of it, which can easily be sketched by the eye and checked with a pocket rule, gives the construction sufficiently to show how it is done, and to form a valuable lesson and record for the sketcher. As far as the sketching of stray cottages and other rural buildings of a picturesque character goes, this may be mere picturesque sketching in the ordinary sense of the word; the effect here generally lies in the whole aspect rather than in the details; though if there is any such thing as a stone mullion or a jamb moulding, the sketcher will not leave it till he has got the profile of that also down on paper. In regard to larger buildings, such as churches, it is not well to despise, as a mere amateur kind of work, the making of a sketch of the whole building. Such a sketch will not give the details, it is true, but it is very useful practice in the study of the general composition of a building; if the effect of the mass, as a whole, is pleasing, he who makes a general sketch of it will get some light as to why it is pleasing, and as to the real proportions of parts, which sometimes prove to be rather different, when they have to be carefully considered and laid down on paper, from what they have appeared to the eye at first glance.



BUTTRESS, LINCOLN.

When we come to such buildings as cathedrals, the holiday sketcher will probably do best to look for details of interest and make studies of them. There are few great cathedrals in which you may not find some interesting corner or detail which has not been made familiar in published illustrations, and which disclose, on close study, more than is at once apparent to the eye. In a general sketch of the east end of York Cathedral, for instance, the pinnacles over the south-east and north-east turrets of the choir aisles would be sufficiently indicated, by a practised hand, in a few minutes; a spirelet with a collection of crocketted gablets, alternating with small pinnacles, at the base. Now let the sketcher ascend to the aisle roof and proceed to make a study of that feature as it is really designed, and he will find that he has a good morning's work before him; no one who has not thus studied it can have any idea of its careful elaboration. A sketcher with a genius for effect in pen, pencil, or wash, may also enjoy the satisfaction of giving a kind of new and unexpected force to an incident of an ancient building by dint of the power of his own style; we remember a drawing of the west front of Salisbury in foreshortened perspective, by a draughtsman of genius, which really made it look quite sublime, though in reality it is the weakest portion of the cathedral. If it be questioned whether this is a right use of the art of sketching, we should reply that every drawing is to be judged by its success, its artistic force, as a drawing; and the artist may quite reasonably say—"That is what it *ought* to look like, at all events."

It is sometimes of interest to sketch a thing for the sake of a picturesque though unorthodox irregularity, if only as a record. The accompanying illustration of Irthlingborough tower, Northamptonshire, roughly traced from a sketch made forty years ago, is an instance. Irthlingborough has now, we believe been "restored," and probably the buttress added at some late date has been removed, and the safety of the tower ensured by more orthodox means. But it was that abnormal piece of buttressing which induced the sketch at the time, the whole pile looked so curiously picturesque; and it is now of value, at all events, as a record of the *naïveté* in which the tower was formerly bolstered up.



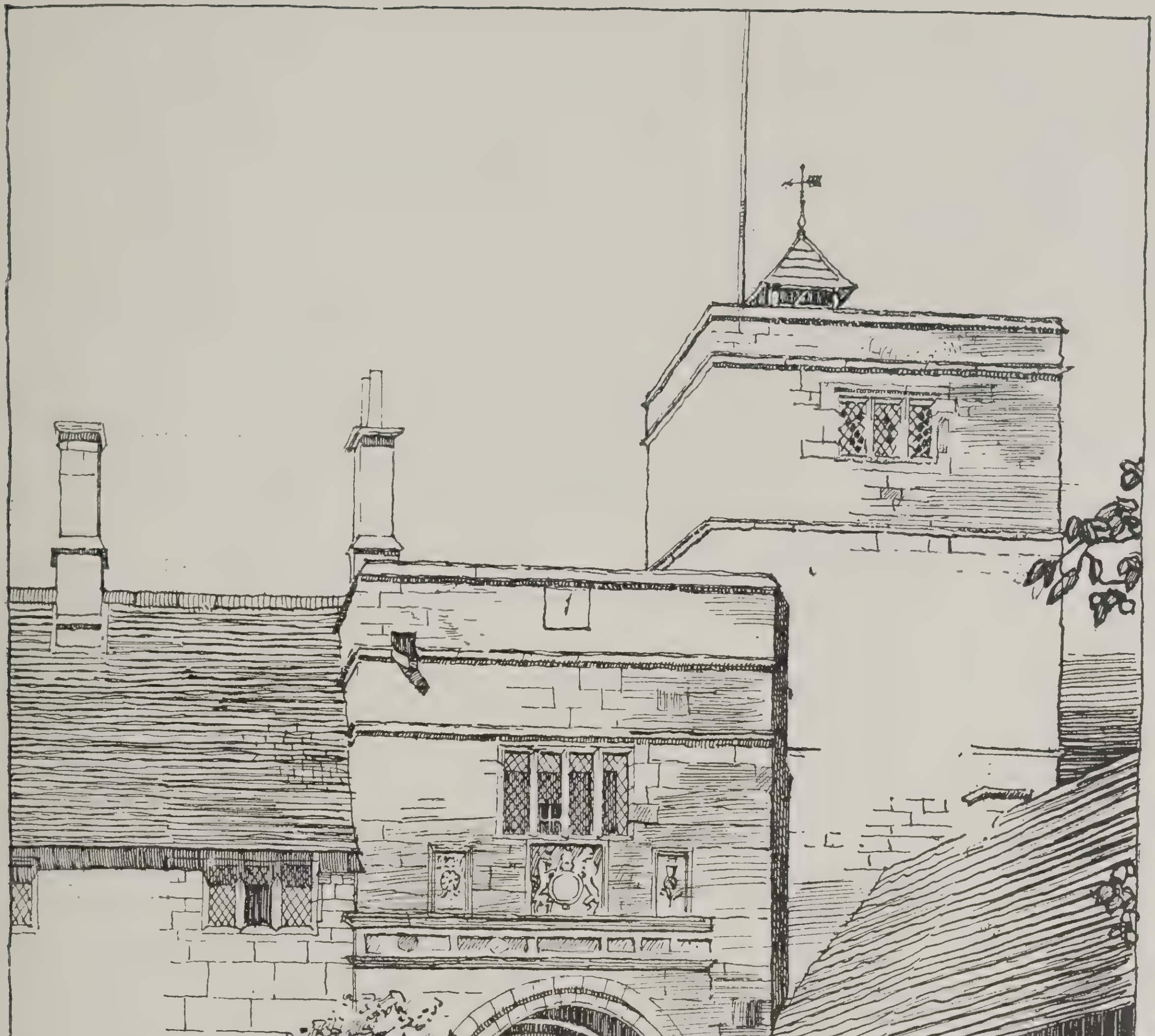
IRTHLINGBOROUGH 40 YEARS AGO.

The question as to what medium should be used in sketching will depend, of course, mainly on the predilections and habits of the sketcher. People work best with the tool which suits their hand and their mode of expressing themselves on paper. But various methods of sketching have each their merits. Pencil is the easiest and in most ways the pleasantest medium to work in; it is less trouble than any other, and it is capable of a good many different effects. For architectural sketching, which alone we are here dealing with, we may quote the dictum once given by an able and experienced sketcher—"You cannot have too smooth a paper or too soft a pencil." The second half of the maxim we should take *cum grano;* a "B" we think is soft enough; but the smooth paper is a necessity; we want decisive and clear lines for sketching architecture, and these cannot be had on rough paper except by the use of a hard pencil, which is an ungrateful instrument, not pliable in the hand; very well for office drawing with rulers, but not for free-hand sketching. It is well not to try much surface shading with pencil in sketching at all events, whatever may be done in elaborate pencil drawing of another kind; on the smooth paper a shading effect can only be got in lines, and they do not add to the neatness of a drawing. If it is desired to give any effect of shadow, a very light wash of Indian ink or (better) lamp-black is the best way of doing it; heavy washes should not be attempted with pencil drawing; they obscure the pencil lines.

There is a great deal to be said, however, in favour of architectural sketching with pen and ink; besides that it is, of course, more permanent, it has the educational value that it compels the sketcher to think well about each line and be sure it is right before he draws it. The ever-ready indiarubber is a rather demoralising influence in pencil sketching; it temp the sketcher into making chance shots at a line, knowing th he can rub it out if wrong, instead of deliberately considerin it before it is drawn. The young sketcher should learn to decisive in his lines, and to draw them cleanly and not "paint over them till an average result is obtained. Nothing is bett practice for this than pen drawing, even if it be used practice only and not permanently adopted. A receptacle f ink is easily hung to the button-hole; a moderately fine ste pen is the best implement.

In applying that kind of initial consideration to his subje which the use of the pen compels, but which should also company the use of the pencil, the young sketcher will find well to acquire the habit of first looking at the building, the portion of it which he is going to draw, entirely as a c lection of surfaces of certain proportions, obliterating architectural details from his attention for the moment, ende vouring to realise, and to dot down lightly on the paper, wh are the real proportions of length and breadth of the ma divisions into which his subject falls. He will find that arc tectural details often have a very deceptive effect in regard the real proportions of height and width in a building, a that these proportions require to be realised apart from impression conveyed by the architectural design. Towers, f instance, with vertical lines strongly marked by buttresses a other features, are apt to appear higher and narrower th they really are. The actual proportions of height and widt therefore, in this and other cases, need to be accurately realis before any details are put in, a proceeding which saves mu

(Continued on page 112.)



A. L. Snow. July 20/1909.

The Gate House,
Wormleighton.

(See "Holiday Sketching," page 109.)

Halle aux Grains, Rouen.

trouble in the necessity of subsequent correction of proportions.

Architectural sketching in watercolour is a separate art, more difficult than that of merely sketching form, and is concerned more with giving the general effect of a building than the actual facts of its design and detail. It is a method of architectural sketching only to be attempted after the delineation of form and detail has been thoroughly mastered.

The Dante Window at Turin.

(See Centre Plate.)

THE six-light window designed by Florence Camm and carried out by her at The Studio, Smethwick, for the English house at Turin Exhibition, 1911, and illustrated by our centre plate, is placed at the end of the corridor in the English house, and the subjects are as follows: In the left-hand light at the top, Dante, nearly ten years old, sees the child Beatrice, and is attracted by her. The occasion, as told by Boccaccio, was a May feast given by her father, at which Dante and his father were guests. He mentions her dress as being of a subdued and good crimson. In the second light, Dante again sees Beatrice after the lapse of nine years. She is dressed in pure white, and is between two ladies of gentle blood older than she. She looks at him and speaks to him. Intoxicated by her sweet salutation, he goes to his own room and has a vision in which a spirit of terrifying power appears to him, bringing in his arms in a blood-red cloak the lady who had saluted him. The spirit carries in his hand a flaming heart, which he declares to be the heart of Dante, and which he makes her eat. This subject is treated in the left-hand light of the lower tier. In the centre lower light, Dante is present at the marriage of Beatrice but she and her friends rally him on his woebegone looks and his emotional agitation. The right-hand top light represents Dante's vision of the death of Beatrice. The right-hand panel at the bottom shows Dante passed by Beatrice in the street without salutation, because she has heard of the scandal which rumour has attached to his attentions to the lady whom he used as a screen for his love of Beatrice. At once a compliment and a challenge to the Italian people, dealing as it does with the strange bitter-sweet heart-history (no matter whether it be wholly or partly legendary) of their great epic poet, this work of an English lady has wholly charmed the Italians, wh probably wish to keep it in their country, though we shoul wish to see it come back.

Lancing College Chapel.

LANCING College Chapel, Sussex, which was recentl opened by the Archbishop of Canterbury, was intende by the founder, the late Canon Woodard, some five and-forty years ago, to be "an immemorial creed in stone.' The building of the large and lofty chapel has gone o steadily for many years, and is not even now finished. A present a crypt chapel, dedicated in 1876, is in use. Architecturally, Lancing Chapel has been described as the fines Gothic church erected since the Middle Ages. The whole o the work has been done by the college workmen, and the ston and chalk obtained from the college quarries. The floorin and steps are of Portland stone. The chapel on the south o the chancel is in memory of Canon Woodard, the founde while in the eastern apse are five single-light, trefoil-heade windows, in memory of Mr. Carpenter, the architect. O entering the upper chapel, what most strikes the eye are it loftiness and its exquisite proportions. The triforium especially noteworthy. The total length is 190 ft.. There an octagonal apse at the east end, and the nave has ten bay The height internally is 92 ft. 6 in., only exceeded by Yor and Westminster. The altar is of marble, approached b seven steps. The chapel, being situated on an eminence, is conspicuous and a dignified landmark for miles around.

Flats and Aesthetics.

IS the flat still fashionable? It has possibly survived th stage. If not, it is still on its trial. It seems, howeve that London has now got well-nigh all the flats it car for, or for which it can find use, and that the period h passed when people took to dwelling in them because seemed to be rather a novel and daring thing to do. The tw main reasons why flats became for a time fashionable, ar sprang into existence somewhat in excess of normal need, we probably a desire to flout the common complaint of commo place people that flats were unhomelike, and thus to acqui a sort of spurious reputation for independence of thought ar action by defying public opinion; and, further, to take wh advantage might accrue from an impression that a flat London implies a residence in the country or a castle in Spai The latter object must obviously have some sort of substratu in fact, and it points to the convenience to the moderate wealthy of having, in addition to their country homes, a to residence in which they cannot be expected to entertain on large or costly scale. Hospitality, of a kind, however, is no means alien to the flat, where, at all events, the visitor mu be made supremely comfortable. Consequently the mo wealthy of the dwellers in flats have done much to render t interiors so tasteful and luxurious—either the one or the othe or, in rare instances, both together—as to atone for t generally unprepossessing exteriors. Another very conside able advantage to the dweller in flats is that he knows qu definitely at the outset his liabilities for rates and taxes, wate and lighting services, etc. Many West End flats, inhabit by cultured and wealthy people, are furnished and fitted wi exquisite taste. A dining-room we have seen is fitted with pure Elizabethan panelling of exceedingly fine workmanship, the panels showing the marks of the adze, which, while so much less a tool of precision than the plane which afterwards superseded it, had decidedly some valuable qualities of its defects, even as the plane has the defects of its qualities. All the furniture in the room is of the period of Elizabeth, except the chairs, which obviously date from the Charles Stuart days. The tapestry is old French, and the old lacework table-cover is of Renaissance style. It is altogether a most interesting interior, and is one of a suite of rooms in which the adaptation of the flat to æsthetic ideals is surely seen at its zenith.

Some "Rustic" Affectations.

THE modern trend in domestic architecture—to attempt to use materials, brick, stone, and wood, in the same way as the old craftsmen—is the result of the seed sown by that brilliant coterie of artists and craftsmen who were headed by the *magister*, John Sedding.

The use of hand-made brick and tile has now, in the best work, become universal. Men like Lutyens, Brierley, Dawber, and Lorimer (to mention only a few) are building, every day, houses and cottages that are as perfect in craftsmanship and design as those built in the sixteenth or the seventeenth century.

Simple composition, and the logical treatment of material, are the factors which make their creations charming. Hosts of lesser lights are following their example in the resuscitation of hand-made material, but with less logic. Affectation of rusticity and of age shows itself. Simplicity and picturesqueness are carried to excess. Roofs are built with so low-cut a ine that it is almost impossible to get even a Tottenham Court Road wardrobe close to the wall. Old tiles are used with defective nail holes, or minus the hanging nibs, and one notorious example in the Midlands has the ridge jumped up and down to affect the appearance of a roof that has sagged between the walls.

The batten door is the "correct thing," and is most artistic f only three boards in width, with wooden latches—or, better still, latches made of string! The men of old used the adze o finish the surfaces of oak; and it is the proper thing now o do the same, to the amusement and contempt of the joiner who has to follow the architect's instructions. Some ultra-artistic men go even further, and treat the surface of oak with a sand blast to give the appearance of age!

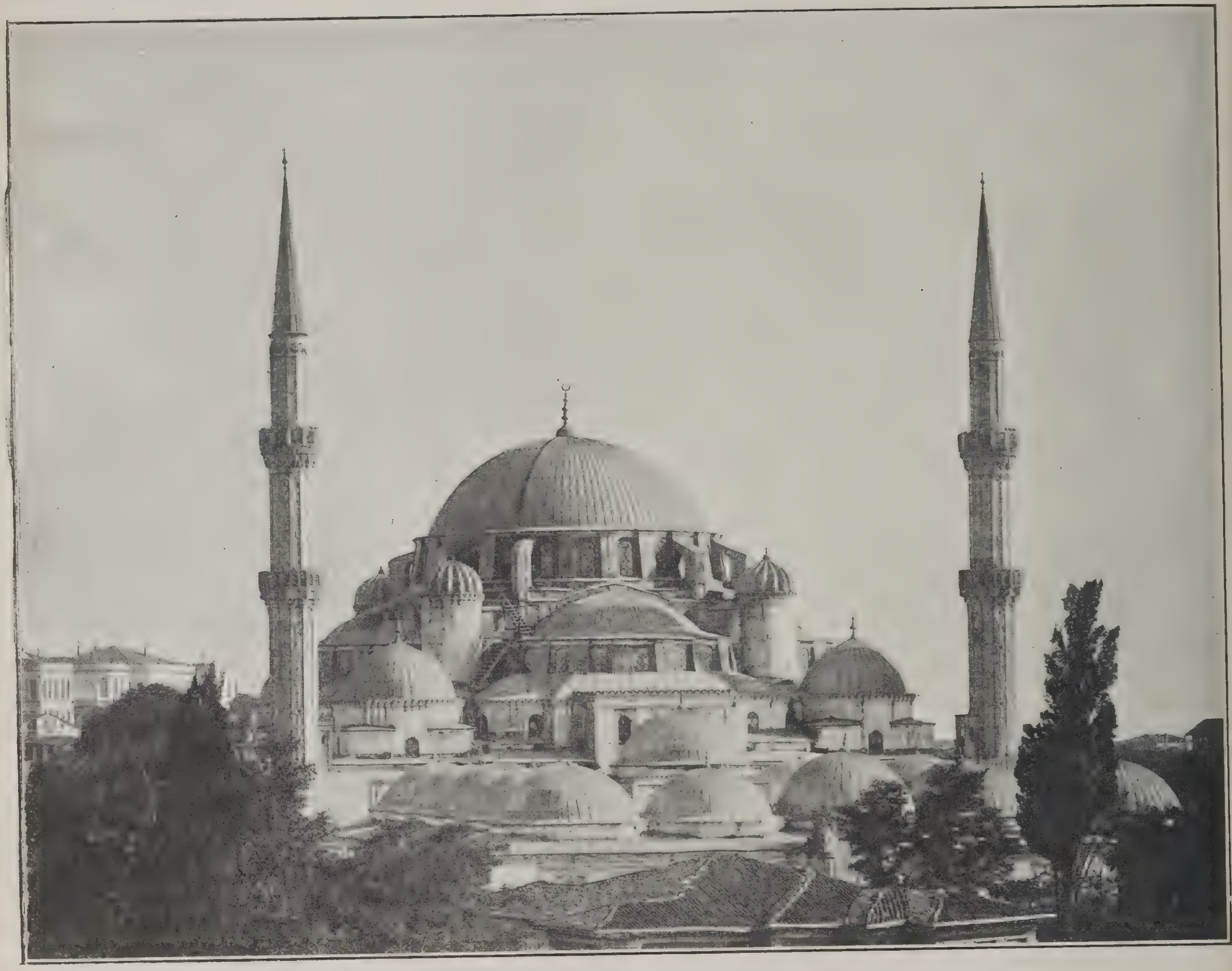
Twisting wriggly stairs are seen, up which it is impossible o get a piece of furniture. Leaded glazing, with leads an nch in width, and horny-looking glass, bumpy plasterwork, etc., are the stock-in-trade of the illogical followers of the ogical craftsmen of mediæval times. Their fault is, that they reproduce the blemishes and accidents of their models, and ignore or distort the merits.

A Popular Misconception.

THE functions of the official architect seem to be popularly misconceived. Hence it is not surprising to read the following note in a provincial newspaper: "The City Architect is to be entrusted with the preparation of the plans for the new sanatorium which is to be built at"—no matter where, for persons and places do not come into the question. The gist of the matter is in this pronouncement: "On the face of it, such a statement seems superfluous, since one would naturally suppose that a city architect existed for the carrying out of the city's work." But what "one would naturally uppose" commonly turns out, on closer investigation, to be merely a superficial inference; which the last analysis may prove to be unwarrantable. It will be clearly understood that what follows refers to general principles, and has no reference whatever to any particular case. It has always seemed to us the more reasonable view that an official architect should be mainly regarded as a wise counsellor upon the building operations of the body by whom he is appointed, rather than as the man who should as a matter of course design and supervise all the work required, from a town-hall to a cart-shed. In this consultative and directing capacity, and in the supervision of minor works in which design is of comparatively small importance, he would, as a rule, find quite enough to do. If, in addition, he is expected to design important buildings, he may possibly be overburdened; and if he receives no extra commission for such work, he will perhaps be underpaid with respect to those particular undertakings, which is not fair either to him or to the profession. It is true that this contingency does not invariably arise. Frequently an official architect is awarded commission or an honorarium for special services; in which case, however, the stern and short-sighted economists of the community will find occasion to blaspheme. They, like the newspaper writer whom we have quoted, "naturally suppose" that a city architect exists to carry out the city's work, but they go further, perhaps, in maintaining that the official salary should cover the cost. Even more important than the busines aspect of the question is the æsthetic consideration. We are inclined to think that that community is wise which throws open to competitors its more important undertakings; for the supposition that an official architect should do the work, involves either the assumption that no one could produce a better design, or else comparative indifference as to the event; and neither of these attitudes affords much evidence of the growing public appreciation of architectural ideals.

Art Education.

AT the annual meeting of the National Society of Art Masters, held at the Victoria and Albert Museum last week, Mr. R. G. Hatton, in the course of his presidential address, affirmed that among educated people there was now no doubt of the value of art as a factor in education. There was now, he said, no need to plead the cause of art; the great trouble was to keep up with the quick pace with which the understanding of it was moving. There should be schools of art reasonably accessible to all the people in a district. He claimed that the people had a right to sound education in art apart altogether from questions of trade or vocation. A much better case could be made out for art as a subject of education, and a more dignified recognition could be secured for it, if it were raised above a technical level, and its æsthetics and psychology were more profoundly studied. Moreover, the training of apprentices and young workmen in schools of art in some subject bearing on their trade was a part of art school work which was not likely to be adversely criticised, and the future would see its extension rather than its reduction. Mr. Hatton's views on the subject are no doubt very sound, and are now much less open to misconception than they would have been but a few years ago, when art was commonly regarded as a thing apart from practical life, and rather antagonistic to it. The supposition that the object of art teaching was to create artists, and thus to swell the ranks of an already superfluous horde of more or less useless if more or less ornamental members of the community, has given place to the larger and saner view that everybody would be the better for a little "hand-and-eye training," for the quicker and truer perception of values in form and colour. Thence must inevitably ensue a general extension of taste, and a more just appreciation of good work whether in pure or applied art. One result would certainly be a better appreciation of architecture and decoration. Hitherto there has always been the fear, more often felt than expressed, that facilities for art study would be abused—that, for instance, "dabbling in art" would spoil a potentially good carpenter and make him an actually bad architect. The fear was not without justification while art education was rare. By making it common, and by making



THE SHAH-ZADEH MOSQUE, CONSTANTINOPLE. GENERAL VIEW.

as clear as Mr. Hatton has sought to do the real objects in view, absurd ambitions will be checked, and there will be no more reason to assume that because a boy is taught drawing he will aim at becoming a painter or an architect than there is to suppose that because he is taught grammar and composition he will naturally aspire to become an author. At the same time, the field from which the professions are gathered will become more fertile, but not altogether if at all more prolific, because the tares will be earlier separated from the wheat. The art schools should relieve the architectural schools of a large part of the painful duty of eliminating the unfit, and should send forward the fit not in greater numbers but in greater proficiency.

THE MOSQUES OF CONSTANTINOPLE.

CONSTANTINOPLE, situated midway between Europe and Asia, has ever been the prize of the contending forces of the East and West, and each in turn has adorned it with a pageantry of splendid art. The great fire which occurred there last week is said to have involved the destruction of some 3,000 houses, besides a score of mosques; and although details are not yet available, it is impossible to hope that every building of artistic or historical value has escaped. In any case, it will be interesting to show here some typical mosques.

The Imperial mosques, for which the city is chiefly famed, offer a progressive series of buildings, wonderful in structure and expression, grand in conception and scale, and still enriched with accumulated treasures of the exquisite craftsmanship of the East.

To the student of history, the mosques visibly symbolise the power of a great and terrible nation, now reduced to a shadow of its former estate and glory. They recall that wave of Asiatic conquest which at one time threatened to overwhelm Europe; and they remain the monument of the greatest triumph which militant Mohammedanism won over mediæval Christianity. Further, they have something of the romance of the unknown, for hitherto they have been jealously guarded by political suspicion and religious fanaticism, and the inquisitive student has been baffled by the difficulty of obtaining a direct intimate study. Mr. Edwin F. Reynolds, however, from whose account of the mosques these notes are compiled, had the good fortune to be allowed full opportunity for studying the mosques, having obtained the necessary *irade* from the Sultan. The Shah-Zadeh Mosque was built by Suleiman I. in 1543-48, in memory of his favourite son Mohammed, and, compared with the Bayezid Mosque, it exhibits several changes which ultimately became embodied in the growing traditions of mosque-building. Its architect was an Armenian named Sinan, who seems to have gathered together the experimental tendencies of his time, stamping them with his masterful personality, and setting the standard which thenceforward guided the design of Turkish mosques. In comparison, he ranks with such men as Bramante in Italy, or Inigo Jones in England.

The Shah-Zadeh Mosque is of medium size, measuring 145 ft. by 166 ft., while the forecourt measures 133 ft. b 147 ft., giving a total length of 278 ft. The forecourt is surrounded by a cloister of unusually large bays, each bein 28 ft. square, and the north and south arcades have deep wall arches with projecting piers. There are three entrances into the forecourt, but the two side entrances are placed out of centre and nearer to the mosque, and this position was always afterwards retained. The mosque itself is set out as an exact square, three structural innovations being apparent. The first change is that the application of the semi-domes is no longer confined to the east and west sides of the central dome. The second point of originality is in the introduction of subsidiary semi-domes, to support the great semi-domes, in place of pendentives as used in the Bayezid Mosque, and thus the complete scheme of the semi-domes of S. Sophia was reproduced, although entirely supported by arches and not indicated in any way on the ground plan.

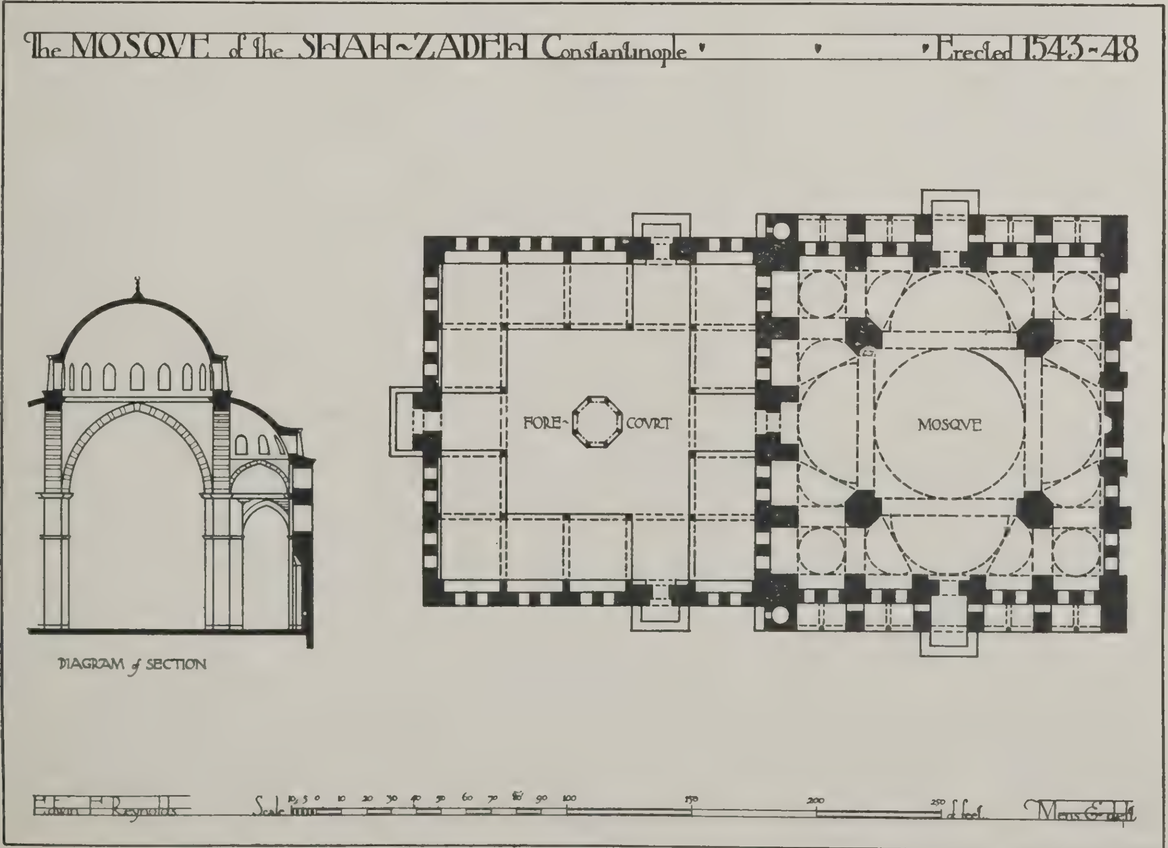
A difficulty arises in fitting the curves of the lesser semi-domes within the rectangular lines of the lower plan, and to this was probably due the simpler design of the Bayezid Mosque. This difficulty was solved in the Shah-Zadeh Mosque by splaying back the main piers so as to give more room behind the great arches for the proper development of the lesser semi-domes, the curves of which left only small spandrels, on plan, to be supported; these were filled out with courses of stalactite corbelling, projected from the walls below.

The third point of fresh development is the extension of buttresses around the outer walls of the mosque. The great height and more elaborate design of the Shah-Zadeh Mosque required a more complete system of buttressing. On the east side the buttresses of the aisle-arches project from the outer wall, and smaller buttresses take the thrust of the diagonal arches over the lesser semi-domes. On the west side the projection of the buttresses is included within the mosque, and the spaces between them are covered with barrel vaults. On the north and south sides the projection is partly included in the mosque, and partly utilised as external porticoes and galleries, the spaces between the buttresses being filled with open arcades and covered with a series of cupolas. The mosque has two minarets, placed in the traditional Turkish position at the junction with the forecourt; the external galleries stop against their square bases. Externally, the higher development of the plan is reflected by a further complexity of grouping. The circular turrets over the four main piers of the dome add considerably to the stability of the central square by their great weight, and they lead very effectively up to the dome. The minarets, set in the midst of the plan, rise up in slender contrast to the broad domical mass of the mosque, accentuating the grouping and clearing it from confusion. The originality of the plan and the beauty of the proportions make this one of the most interesting, and perhaps the most beautiful, of all the Imperial mosques.

Having secured remembrance of himself by the erection, in 1608-14, of the great mosque which bears his name, Ahmed, in 1615, commenced the erection of another mosque in honour of his wife. The work was interrupted by his death, two years later, and, remaining unfinished for fifty years, was completed on the lines of the original design for another lady, the mother of Mohammed IV.

This mosque, the Yeni Valideh Jami, differs from all the other Imperial mosques in situation; for, instead of being raised on an eminence and enclosed by the seclusion of an outer court, it is built on the shore of the Golden Horn and is surrounded by a busy market-place. Externally, the width of the mosque is 156 ft., and the total length, including the forecourt, is 272 ft. The forecourt is seven bays square and has the normal arrangement of entrances and the usual water-cistern. The mosque has semi-domes on all four sides of the central dome, and each of these has two subsidiary semi-domes except at the west, where the design of the Ahmed Mosque is recalled by three subsidiary semi-domes. The only novelty of planning is in the development of a continuous western aisle passing through the main buttresses, the inner points of support taking the form of detached octagonal piers. The external porticoes and galleries, and the position of the two minarets, follow previous mosques in the arrangement which had now become a settled tradition.

In this mosque there were no new problems to be solved, the design of this class of building having in a large measure become customary and automatic. Indeed, the time of large constructive originiality was over; and for a brief period Turkish art passed smoothly along the high level it had attained. The later date of the building of the Yeni Valideh Mosque in indicated rather by slight changes in the adjustment of parts and a care for well-calculated effect than by any novel distinction. Even the space of fifty years which intervened between the commencement and the completion of its erection has left hardly a trace in the continuity of its design.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ARCHITECTURAL COPYRIGHT.

IMPORTANT DEBATE IN THE HOUSE OF COMMONS.

In the House of Commons on Friday an attempt was made to exclude "the construction of an architectural work of art" from the provisions of the Copyright Bill, but the amendment was defeated. The Bill was being considered on the report stage.

Mr. Joynson-Hicks Opposes.

Mr. Joynson-Hicks moved the amendment, which, he said, would exclude from the proposed protection of copyright architectural works of art. He said that he objected to the inclusion of architecture in the objects of copyright, because all the great buildings had been the outcome of the development of previous ideas. The architects' plans were, of course, protected, but the general aspect of the buildings had never up to this moment been an object of copyright. It was entirely against the interest of the general public that the exterior appearance of buildings should be vested in the hands of the individual architect. Under the provisions of the Bill, it would be necessary to find out not only whether a new building was original, but also whether in its appearance it was artistic before the copyright would arise. Who was to decide whether it was artistic? Was a judge of the Chancery Division to decide the matter on a motion for an injunction? Would that be satisfactory? Would the House not be most unwise to pass a law which the principal copyright judge had said would raise grave difficulties in deciding such questions? He pointed out that an architect was in a different position from an author, in that the architect received his fees for work done, whereas the author had to wait for his remuneration. The House would remember that on the subject of the Thames Bridge they allowed themselves to be very much influenced by Mr. Beresford Pite. He was going to ask the House again to be guided by this distinguished authority, who had written to him the following letter:—"I know that a Committee of the Institute and an international convention have taken steps to secure the inclusion of works of architecture amongst those protected by law from copying or piracy. Therefore with very great diffidence I object that this may be an idea impossible of attainment, and that if possible it will be useless. As an originating artist, it will be no privilege to have secured to me that I may repeat myself in copies rather than by designs. I will cheerfully bestow this unprogressive operation upon the world at large and look for nothing but public benefit from the absence of copyright in the stimulating work of architecture. That Bramante closely followed Alberti's originalities, that Raphael copied Bramante, followed by San Gallo, Perazzi, and

THE YENI VALIDEH MOSQUE, CONSTANTINOPLE: VIEW OF EAST SIDE.

ther contemporaries, would seem to prove hat the inclusion of architecture in a Copyright Bill of the cinque-cento would have stagnated the Renaissance and dried up the source of artistic progress. I am convinced that the true interests of art would not be served by restricting the inelligent copying of works of good archiecture, though the bad may be copyighted with advantage."

Mr. Dundas White, who seconded the amendment, regarded this provision as one of the most serious blots on the Bill.

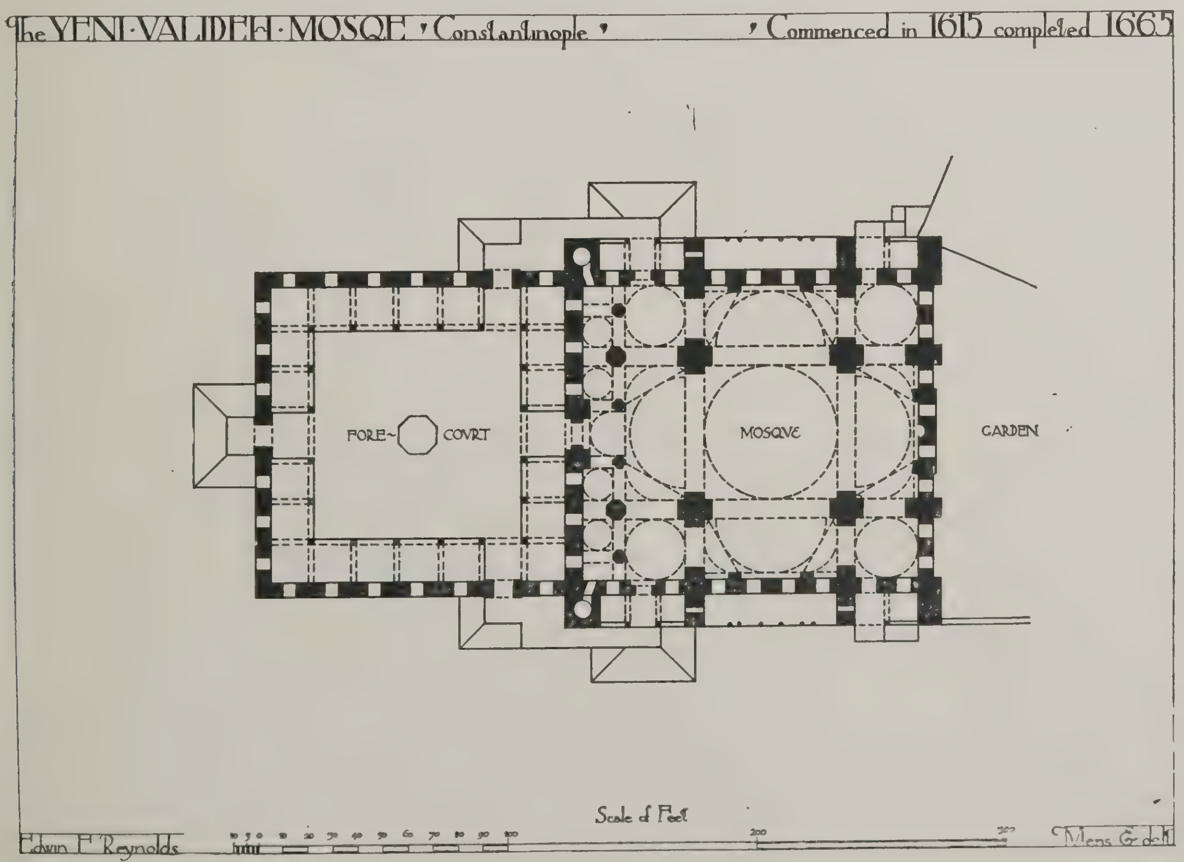
The Attitude of the Government.

The Solicitor-General (Sir J. Simon), speaking for the Government, intimated hat it would be left to members to vote as they pleased, but members ought to realise the strength of the argument for including architecture within the terms of the Bill. A wise man endeavouring to udge a necessarily difficult subject would pay some regard to the conclusions arrived at by a body of people who had devoted themselves to it, and had evidence before them. There was a great convention signed as the result of the Conference at Berlin. That was an international discussion followed by internaional results. The inclusion of archiecture in the scheme of a Copyright Bill was thus recommended and covenanted or in the Berlin Convention. Our representatives, negotiating with the other great civilised Governments of Europe, came to the conclusion that this thing ought to be put in. It was, of course, perfectly open to the House of Commons to refuse to include architecture, but hon. members ought to consider the matter very carefully. In addition, a Select Committee considered the question as to whether our copyright law ought to include architecture. Out of sixteen members of that Committee, fourteen came to the conclusion that it was wise to inlude architecture. They were not acting entirely without the experience of other parts of the world. He had listened with respect to the letter of Professor Beresford Pite, but did anyone doubt that the modern school of architecture in Germany was admirable although they had this law? Was architectural ingenuity and taste not in an advanced state in France? In France they had this law. It had also been adopted since the Convention in Denmark and another country which he did not at the moment remember.

Mr. Joynson-Hicks was understood to express a doubt whether Germany had adopted the same law.

Some Features of the Project.

The Solicitor-General said that at all events other countries in which architectural development was a matter of significance and importance had adopted this view, and though their experience was recent, it justified this proposal. The Select Committee had had valuable evidence from France as to how the rule was working there. The Grand Committee then considered this Bill, and discussed the matter, deciding by a large majority to retain the provision in the Bill. Mr. Joynson-Hicks had said that not only was the work to be architecture, but it was to be artistic as opposed to being merely industrial. But that argument applied as much to other things dealt with by the Bill. The test of the artistic to be applied by the courts was to be applied to other things, whether architecture was included or not. That was one of the difficulties of the subject inherent in copyright law. It was an offence against the law to copy plans, but it was not an offence for a man to take a photograph of four sides of house, to get inside and observe the internal arrangements, to go outside, write down the details on a piece of paper, and then proceed to build an exact replica of that house. Was that fair? (Hear, hear.) If they were going to make it the law of the land that they should intervene to protect the architect whose plans were stolen or copied, it was absurd, unless the thing was too difficult to accomplish, to refuse to say that an artistic and original idea as expressed in a building, if it was proved, was a thing for which the architect was as much entitled to claim as the plans which were the key to the construction or the directions for the building. When it was said that there would be difficulty in applying this law, he would ask upon whom the difficulty would fall. It was the architect. It was for him to prove the matter. He believed cases would be very rare in which an architect would be able effectually to make use of this provision. But they would not be justified in excluding from the Bill a protection which would only operate in rare cases. It might be said that the result would be to increase the cost of small houses, and if he thought so he would take a very different view of the matter. He thought the result, so far as any economic result was to be expected, would very likely be the opposite. If they wanted to employ an architect to design a small house, they must pay him the fee which the architect was able to demand in the market, and if they were not prepared to do so they must put up with the local builder. If they asked the architect to build a house which contained something of merit they would be protected against anybody stealing that house. Suppose the architect had a dozen commissions for the same design, the result would be that he would charge a great deal less for each copy of his design when he was supplying perhaps a dozen copies than if he were only supplying one copy. The idea of copyright was much more limited than many people thought. It was not a protection of ideas. They could not protect ideas.



It was a protection of the original and artistic form in which an idea was drawn. A style of work, a mode of arrangement, or a new general view was reproduced with the greatest freedom and ease, just as the idea of a new kind of poem or a new picture was constantly reproduced. All it was designed to do under this provision was to stop the rare case, but grave case, of a palpable, obvious, and complete plagiarism. He reminded the House that if a building had been started nobody could insist, under this Bill, upon its being pulled down. It would be a very hard thing to say to the building owner that he had to pull down his house if it turned out that the architect was palpably indulging in an act of plagiarism. He asked the House to regard the whole matter with care and with tact.

Cui Bono?

Mr. Barnes said that if the provision was included in the Bill the lawyer would gain a great deal more than the architect. It would be almost beyond the wit of man to prove that a house was original in design, and in that lay the difficulty of the situation. By this provision they would be doing little for the benefit of the architects. It would lead to litigation and endless expense, and the people who had to pay for the products of the architect would have to pay the lawyers' bills in the long run.

Sir Frederick Banbury remarked that a man wanting to erect a cottage like one he had seen somewhere might find himself landed in a lawsuit. He thought the proposal was legislation run mad.

Copyright in Ideas.

Mr. T. P. O'Connor said he found that gentlemen who were champions of the right of private property always drew the line at the sacredness of the right of publishing an idea. He appealed to the House to stand by the decision of the Committee on the Bill. This subject was thoroughly threshed out in Committee, and the debate ended in harmonious agreement. They were now asked to break away from the international convention and from the decision of the civilised world. He was jealous for this country in its dealing with art. It had long been a reproach to us that we paid less respect to matters of art than did any other civilised country in the world. They were being asked, in the face of the law of other countries, to take the lower and vulgar position of depriving the architect of copyright in his work. The postion of the member for the City of London (Sir F. Banbury) might recommend itself to the bankers and dealers in Consols, but it should not recommend itself to those interested in matters of art. Was architecture so mean an art that they should deny it protection? The great architects of the world were as much entitled to protection as great artists in other branches.

A Trap for the Unwary.

Mr. G. Marks said that as the Bill stood there was no necessity for the owner of a copyright to register his design. Hence this provision was to be a trap for the unwary. Persons might be building houses in which they embodied a feature that they had seen somewhere. There was nothing on record to show that that feature was registered or that it was not public property. If a man erected a building with this feature in it the architect could come on the man who made the drawings for damages. Thus it was proposed to pass a Bill that was to create in regard to every man's house erected hereafter as many offences as there were features of interest in it. They could not find out whether the feature was anyone's idea until an injunction was applied for. The Bill would harass every man's home, and would prevent architecture from expanding. There were three ways of protecting ideas. They could do it by registration and by putting on a number. If they did not put on a number the thing failed. Then they could register a trade mark, and it must be registered in order to be effective. In the third place, they could patent a design or invention, and if they did not put the number on, the patent failed. Here the House was going to make every building free from numbers and to penalise any one who used something which he could not possibly know to be the subject of proprietary rights.

"Architects have no Case."

Mr. Mackinder pointed out that a sculptor made a statue and did not register or mark it with the intimation that it was copyright. That applied also to pictures. It was very difficult for an architect to produce original designs nowadays. What he did was artistically to combine features already known. If there was to be litigation, who was going to law? Even the blackmailer would not go to law if he was likely to be defeated. In face of the fact that they would have to prove that the design was artistic and original, architects would have no case unless they could prove gross copying in detail of the work of the architect. At present the architect has to get the whole of his return from single buildings, and therefore he worked only on public buildings and for the wealthy classes. If he were to get a small royalty on each building, he would work for the improvement of small buildings and dwelling houses, and so improve the design of a mass of buildings in the country.

Mr. Pringle declared that in the speeches made on behalf of this proposal there had been no attempt to make out a practical case for the architects. There was no evidence that there was any complaint from a single architect on the subject. The men who were not asking for protection were to be subjected to the risks of useless legislation.

Sir William Anson said he supported the clause as it stood because he thought the architect might get a small royalty on the multiplication of his designs.

Mr. Wedgwood contended that no need had been shown for including architecture. Though Acts for this purpose had been in force in France for years, no advantage had been taken of them. If they were to have copyright in the artistic window, why not in the artistic piece of furniture or the artistic dress? They were leaving it to the lawyers to decide whether the design was artistic, and whether it was original, and what was the main feature. All these questions would put endless money into the pockets of the lawyers. If the House let this clause through, they would have all sorts of people making claims against leading architects, and alleging that the latter had cribbed their designs.

On a division the amendment to strike out architectural works of art was rejected by 154 votes to 142. Copyright in architecture thus remains in the Bill.

COMPETITIONS.

Elementary School, Wallsend.

As we announced last week, Messrs. Marshall and Tweedy, of Newcastle-on-Tyne, have been awarded the first premium in this competition, and some particulars of their design may now be added. The accommodation provides for 1,440 children in three departments, also cookery, manual, and dining room for children, caretaker's residence, and three class-rooms for domestic subjects. The whole of the schools are single-storey buildings, and embody the latest requirements of the Board of Education with respect to central halls, and the better ventilation and isolation of class-rooms.

It may be recalled that the same architects were also successful in securing first place in the competition last year for new schools for the Northumberland County Council, erected at Whitley Bay for 600 children, and were, in competition, appointed architects for the King Edward Schools opened last year (accommodation for 1,400 scholars) erected for the Tynemouth Council. They have recently been appointed architects for a new school for the Durham County Council.

Northampton Secondary School for Girls.

The successful competitors in this competition, in which Mr. James Osborne Smith, F.R.I.B.A., was the assessor, are announced as follows: 1, Sharman and Archer, Wellingborough; 2, Talbot, Brown, and Fisher, Wellingborough; 3, Gotch and Saunders, Kettering. Two other sets of designs were mentioned as coming next in order. In all, twenty-two sets of designs were submitted.

Cemetery Buildings, Whitley.

With reference to the proposed cemetery buildings for which the Whitley and Monkseaton Urban District Council instituted a competition—(see p. 36 of our issue of July 12th)—we are informed that the three premiated competitors have been invited to a further competition, based upon a further explanation of the cemetery committee's requirements. The new plans are to be sent in by August 17th, and the unsuccessful competitors are to receive twelve guineas each, "the successful one being guaranteed the carrying out of the work if a satisfactory tender is received within the limits of the estimated cost mentioned in the original competitions."

A Lady Wins the Prix de Rome.

The Prix de Rome for sculpture has been awarded to a lady candidate for the first time in the history of the foundation. The winner of the prize, Mlle. Heuvelmans, is thirty years of age, and is the daughter of a cabinet-maker. She appears to have discovered her talent for sculpture at the age of 18, and after studying under MM. Hannaux, Marqueste, and Denys Puech, she competed for the prize for the first time in 1906, and three years later she was successful in obtaining a second prize.

Proposed Mammoth Hotel for London.

Mr. Frederick Sterry, of New York, proposes to erect a mammoth hotel somewhere near Hyde Park Corner that is to cost nearly £2,000,000, and is to be run on strictly American lines. Mr. Sterry built and now directs the 10,000,000dols. Plaza Hotel, in New York, which is twenty storeys high and covers a square block, which was the site of a hundred houses.

FIRE PREVENTION NOTES.

London's Losses by Fire.

The report of the Fire Brigade Committee presented at the London County Council's meeting on Tuesday week included many items of unusual interest. It has been the practice since 1898 for the officers of the Fire Brigade to make a rough estimate of the monetary loss caused by each fire in London. These estimates do not extend to expenses incurred by insurance companies and others arising out of claims for damage resulting from fires, nor do they take account of any consequential losses which owners of property may sustain. The lowest total estimated loss, £394,425, occurred in 1904; the highest, £812,040, in 1902; the average for the thirteen years 1898—1910 being about £540,400, and the grand total exceeding £7,025,000.

An Experiment at St. Paul's.

According to the "picturesque reporter," "a thrilling spectacle was witnessed" at St. Paul's Cathedral on the morning of July 19th, when "to all appearances the cathedral was on fire, for firemen poised eerily on the gallery at the base of the dome were pouring hissing jets of water over the roof." Happily, the curious expression, "to all appearances" was enormously discounted by the absence of smoke or flame. The firemen, under Lieut. Sladen, were simply carrying out a practical test of their ability to cope with a fire in the dome. Hose was hoisted by means of ropes to the high gallery, whence a stream of water, pumped from two motor engines stationed in St. Paul's Churchyard, was directed over the dome, and eventually a column of water was sent high above the cross, whose top is 370 ft. above the pavement. It was to some extent a reassuring demonstration. It proved, at least, that the authorities of St. Paul's, and the Fire Brigade officers, are keenly alert for the preservation of the cathedral from the fire risks to which it is peculiarly exposed by being hemmed in by huge warehouses packed with combustible materials. Supposing, however, that the dome were to be set alight by wind-borne débris from a fire in any of these premises—and there have been large fires in the Churchyard—the firemen, it may be supposed, would be confronted with an enormously more difficult and more dangerous task than that of demonstrating, without hindrance from heat, smoke, or flame, the possibility of dragging hose and raising water to the requisite height. It is to be feared that a rain of molten lead would almost certainly render the firemen's ingenuity and agility ineffectual. No doubt the experiment was conducted with due regard to the possibility of damage from water; in which case the mere washing of the exerior surfaces would be rather an advantage.

Dangers from Storage of Celluloid.

The Fire Brigade Committee of the London County Council report that since March, 1910, here have been five cinematograph film fires in the vicinity of Charing Cross Road. There are, it is stated, about twenty cinematograph film stores in the immediate neighbourhood, and in some cases the films are stored in premises used partly as dwelling-houses, where there is no fire-resisting separation between the film-store and the portion of the premises used for domestic purposes. This, the Committee declare, "undoubtedly constitutes a very grave and serious danger, and," they add, "we are strongly of opinion that some steps should be taken with a view to placing safeguarding restrictions on the storage of cinematograph films, which are made of celluloid and are highly inflammable." It is recalled that the Home Secretary, replying to a question in the House of Commons, expressed the opinion that further legislation was needed to deal with the danger. Since that occasion he has suggested to the Council the desirability of amending the London Building Acts in accordance with this view. The Public Control Committee of the Council propose that legislation should be sought to provide for the licensing by the Council of all places where dangerous businesses are carried on, and for the inclusion among such businesses of the storage of cinematograph films. These proposals appear to the Fire Brigade Committee to be a satisfactory way of dealing with the matter, "provided that it is made clear that the Council should have power, as a condition precedent to the granting of a licence, to insist on structural alterations of buildings being carried out, and to make any other necessary requirements with the view to the protection of life and property from fire." As some considerable time must elapse before such an alteration in the law can take effect, it is hoped that in the meantime, in order to prevent further risk, voluntary precautions may be taken by the holders or owners of such premises. This need not be a very formidable task. Surely it is possible to keep such films as are not being worked upon perfectly safe in suitable fireproof receptacles, and to line walls, floors, and ceilings with incombustible materials, so that the mere flaring up of a single film would be an accident of little consequence.

Fire Dangers from Drought.

The recent prolonged drought has in many ways greatly increased the liability to outbreaks of fire. The direct results are obvious on almost every heath and every railway cutting or embankment, where large patches of vegetation, sere and sapless through the absence of rain, have been destroyed by sparks, and, in some cases, it is said, by spontaneous combustion. Rural and suburban brigades have been kept very busy with frequent calls to such outbreaks, which are, of course, of much less consequence in themselves than in the possibilities of the damage to life and property that may so easily ensue. The great heat that accompanied the drought has converted ordinary structural and other woodwork to mere tinder, ready to take fire on the slightest provocation. The spark from a pipe or cigarette, and the match carelessly thrown down by the ubiquitous smoker, now assume a tenfold capacity for mischief; and indeed instances are reported of such woodwork, as well as curtains and similar fabrics, all parched by the absence of the average degree of atmospheric moisture, taking fire through having the sun's fierce rays concentrated upon them by some strongly reflecting surface, such as that, for instance, of a shaving glass or a polished metal soap-dish. Such occurrences seem almost incredible, but are apparently well authenticated, and account for outbreaks that would be otherwise inexplicable. They ought, at any rate, to be impossible, as they would be if the fabrics used for domestic hangings were treated with some fire-proofing solution, and the woodwork was either rendered incombustible or superseded by some fire-resisting substitute. Of course, a tropical summer in this country is just now regarded as a very exceptional experience, so that no provision need be made for the extraordinary risks that are due to it; but it is just possible that as we have had a long succession or cycle of damp and chilly summers, so we may now have entered upon a cycle of summers that may be abnormally hot and dry; in which case the employment of fire-resisting substitutes for wood in walls and roofs would possess the double advantage of safety from fire and protection from high temperatures, such substitutes being, as a rule, excellent non-conductors of heat.

Spontaneous Combustion.

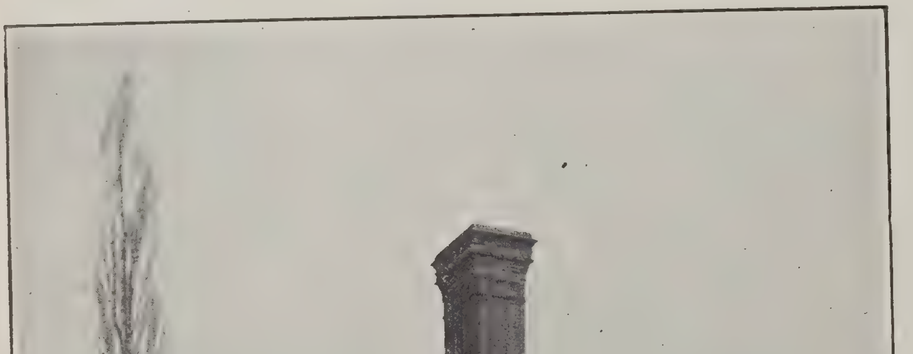
Spontaneous combustion is a matter about which very little seems to be known. It is said to have occurred rather inexplicably in a case in which a magnificent Scotch fir was destroyed. Red ants, it is recorded, had long made their home at the base of this tree, and had in the course of years constructed an immense anthill at its roots. That summer was remarkable in Lancashire for periods of fierce heat, followed by shorter spells of copious rain. Though no one actually saw what took place, subsequent examination rendered it certain that, during a return of heat after a downpour of warm rain, spontaneous combustion was set up in the antheap, with the result that the roots of the tree and the lower part of its stem were so completely charred that the giant collapsed and fell to the ground. "May not," the narrator of this story asks, "spontaneous combustion of this kind explain many of those forest fires in other countries, which have been variously attributed to lightning, to the sun's rays being focussed through bits of broken glass, or to the seemingly still more unlikely reason of the attrition of two dry boughs by wind?" One cause of spontaneous combustion which is well recognised is the mingling of oil and turpentine on cotton waste and rags, which has in many instances given rise to fires in printing offices. Oil is used for lubricating the machinery, and for protecting the iron imposing surfaces from rust, while turpentine is employed for cleansing type, etc., and the same rag is used for wiping both. So many fires have resulted from this combination that these cleansing rags are now always kept inclosed in iron or tin receptacles.

The Forest Fires in Canada.

The intense heat that had been prevalent for nearly a month had a disastrous effect in spreading the fire that broke out on July 12th in Northern Ontario, where several townships have been destroyed and hundreds of lives have been lost. A fire on a railway bank in England has, at the worst, a limited area for destruction; but in the wooded districts of Canada a spark or a live coal from a passing railway engine may possibly cause "a wall of fire 200 miles in length." The scene of the Canadian conflagration is a stretch of country lying to the west of the Ontario Government Railway, known as the Temiscaming and Northern Ontario Railway, running from North Bay, on the Canadian Pacific Railway, to Cochrane, where it joins the Grand Trunk Pacific Railway. This thickly wooded country of several hundred square miles area is a silver-mining district, in which all the camps were reached by rough wagon roads through the forest. Aided by a 60-mile breeze, the flames swept along so rapidly as to cover, within an incredibly short time, an area thirty miles long and two miles wide, giving the inhabitants of a township called Porcupine but little chance of escape. There about 200 perished, and there were many deaths elsewhere, the fire being probably the most far-reaching and most destructive that Canada has ever known. Almost simultaneously with the Canadian fires, forest fires were raging in twenty-one counties of Northern Michigan, where there were 300 deaths, 4,000 persons were rendered homeless, and the damage was estimated at more than £2,000,000. Forest fires in a growing country may be said to bring their own antidote against future attacks; for when they have exhausted themselves there is nothing left to burn. As to the vast tracts of woodland that remain, it might be possible to devise some system of safety zones, but beyond that it would seem as if little or nothing can be done to prevent such appalling disasters.

Defective Flues.

In these columns, attention has been repeatedly drawn to the fire dangers arising from defective flues. In taking up this undoubtedly important subject, a writer in an architectural contemporary has developed it in a direction in which we hardly follow him. "We are all perfectly familiar," he writes, "with instances where defective flues have led to property loss, if not loss of life. In some instances, no doubt, the fault has been of construction rather than design, but in such case adequate supervision was not furnished. It is probably a fact that a single conflagration resulting from a defective flue has caused the loss of an amount of money sufficient to have corrected or rebuilt every improperly constructed flue in the country. The situation is not one that reflects particular credit on architects or builders. It indicates carelessness and lack of appreciation of the danger resulting from slack methods on the part of either the designer or the constructor. There is no reasonable excuse for disregarding the known danger of fire kindled from flues that are not properly built. It is not the result of ignorance, but carelessness, which it may be necessary to penalise before the needed reform will be fully accomplished." We had no intention of going so far as this. We did not suggest carelessness on the part of architects or builders, but laid particular stress on the fact that while the flue, being almost the hardest-worked part of a house, is naturally liable to wear and tear and deterioration, it is seldom or never inspected except by the chimney-sweep, who, if he happens to detect some radical fault, may or may not think proper to report upon it. Therefore we advocated the periodical inspection of flues, especially in old buildings, by properly qualified persons; and possibly, when the full extent of the danger is realised, this course may some day become compulsory.



This lodge, erected in 1866, is a typical example of the late Eden Nesfield's style in small domestic work. Notable features of the building are the cut-brick pilasters, the tall carved chimney, the plaster cove beneath the eaves, and the pronounced Classic character of the detail.

THE LODGE, KEW GARDENS, LONDON. THE LATE W. EDEN NESFIELD, ARCHITECT.

CINDER CONCRETE IN A FIRE.

The fire-resistance of cinder concrete has been often called in question, and therefore the following account of the behaviour of this material in a fierce fire will be read with special interest. A fire started on the fifth floor of an eight-storey building, and gained good headway before being discovered. The loft was occupied by a firm of manufacturers of wall paper, and nearly the entire floor area (75 ft. by 200 ft.) was filled by stacks of finished wall paper, the rolls being set up on end with narrow passage-ways between the rows of stacks. This arrangement of the stock made it possible for the fire to spread quickly, and in a very short time the interior was a mass of flame. The fire was first observed shortly after 5 a.m., and water was played on the building until late in the afternoon before the fire was extinguished. The building, which was erected in 1906, and was occupied by a printing firm and the N.Y. Last Co., besides the firm of wallpaper makers, is a steel frame structure with brick walls and cinder concrete floor arches. The webs and soffits of the beams are protected by fireproofing, but no wire lath was used on the ceilings. The columns were covered by 4 in. of cinder concrete in which was buried wire loops.

The method of fireproofing used was to enclose the lower flanges of beams with wire lath, and after the forms were stripped from the slab and web of beams the soffits were plastered with cement mortar. Window heads and spandrel beams were protected with wire lath and patent plaster. An interior finish coat of cold water paint was applied on ceilings. There was a 6 ft. high wainscoting of North Carolina pine, and the floors were of maple 1⅛ in. on sleepers. The lofts are open for entire area of floor, and are cut off from an extension and from lift and stair shafts by standard fire doors.

The damage to the building above the fifth floor, where the fire occurred, was confined to exterior brick and glass from the heat and slight damage by smoke. Below the fifth floor the only damage wa by water. The structural damage to the building was confined to the fifth storey. It was possible for the printers, whose press room occupied the basement and first floor, to proceed with the publication of several periodicals which appeared early in the following week.

The damage to the fifth floor was as fol lows: Window frames and sash (of wood entirely burned out; flames attacked bric façade above windows, necessitating th replacing of four or five panels betwee fifth and sixth floors; bluestone sills o sixth storey windows showed more dam age than brickwork; steel lintels ove fifth storey windows, no damage; plaste window heads over fifth storey window completely ruined; exterior of brick pier of front badly affected, evidently from combination of flames and water; floorin and wainscoting entirely consumed; toil (enclosed by wooden partition) complete burned out and fixture unrecognizable cast-iron pipe cracked and broken wrought-iron steam pipes bent into fa tastic circles and connections to risers o other floors cracked. The net damage cinder concrete and the structural ste which it protected was that the coverin around columns cracked in vertical line, nearly all cases in line with the flange the columns, but in no case dropped off, bond wires held it in place; the soffits slabs over certain sections where heat w greatest have lost their immediate st e, i.e., that of immediate contact with form, but in no case has wire fabric nforcement been exposed; in nearly all es a crack has appeared in the cement rtar covering the soffit at the line of beam flanges, this being only a hair ck, but nowhere did soffit's protection ak or fail; wire-lath and plaster protec- n to seat underneath knees used for eting girders to columns entirely troyed.

he damage to floors caused by rust m the great quantity of water poured o the building is, of course, dependent the character of the steel and fabric d, and has not been determined.

fter the fire some of the protection was pped off to ascertain the condition of the el. The result seems to indicate a com- te oxidation of the paint, and, from all ual effect, the steel might never have n painted except where the concrete was actual cohesion.

he fireproofing on this building was e at a time when good cinders were rce, and it was not supposed to be ex- tional in any particular, but would resent only an average commercial job. e builders are naturally much pleased the behaviour of the cinder concrete proofing under this remarkable test.

he wall-paper company who occupied floor where the fire occurred, wrote ut it as follows: "It was a serious con- gration, and, being wall paper, must e generated a great heat. Notwith- nding this, the flames were entirely con- d to one floor. The regular work of ten- s on other floors was going on while the was progressing, the elevators were ning, and no serious inconvenience experienced by anyone except our- es." The company were so much im- ssed with the fire-resisting qualities of crete that they are considering the erec- of a concrete building for their own

FIRE IN A STUCCO AND CONCRETE HOUSE.

he behaviour of various materials in ctual conflagration always forms an in- sting subject for study, and the fol- ing account of how fire was withstood house constructed of cement stucco, solid concrete roof, will be found use- as showing the value of these materials er a pretty severe test, the house being pletely burnt out.

he building has a concrete foundation, also concrete wall up to the level of first floor. From the ground line to first floor level the walls are of imita- boulders made of concrete, these being in a bed of cement mortar. The walls ve the first floor are of cement plaster vood lath. Four coats of plaster gave wall a thickness of nearly 2 in. with ble dash finish. The roof frame was structed in the same manner as for , wooden rafters and sheathing being . A space 1 in. wide was left between heathing, and this was covered on the le with lath. Forms were then con- cted around the edges of the roof to ide eaves, and a mortar made of ent and quartz sand, wet enough to be y, was placed on the roof and elled smooth.

e first started at about nine o'clock e evening in a stairway leading from itchen to the basement, spreading first clothes chute adjoining the stairway, then up the chute and to all sur- ding parts of the building. When the was at its height, the fire department decided that holes should be made in the concrete roof to let out the heat; a sky-light in the centre of the roof had given way, and a column of flame 20 ft. high was coming from this. A number of fire-men on ladders ascended to a point from which they could attack the roof with their axes, but after an hour of hard work descended, having failed to break the roof at any point, although rafters, window trim, and the stucco wall of a dormer had been chopped away.

An inspection of the house a week after the fire found the roof supporting itself for spaces of 15 ft. or more where the rafters had been burned away. All of the rafters still in place were so badly charred that they could be picked apart with the fingers. Many of the floor girders were burned away, leaving the stucco walls without bracing to support the heavy roof. None of the concrete work on the building was injured except the breaking of 7 or 8 sq. ft. of stucco off the under side of an eave, at a point near where the fire was the hottest. This stucco could not have dropped off until after the heat had subsided, as the lath beneath was not charred. Although all the combustible materials in the building were almost completely destroyed, the stucco and concrete shell remained almost uninjured.

The Abbey Annexe.

The coronation annexe at Westminster Abbey has been sold by tender to Messrs. Brooks and Fisher, Rushmead Villas, Hornchurch Road, Romford, and the work of demolition has begun.

Discovery of Ancient Statuary at Ostia.

Professor Dante Vaglieri has had the good fortune to discover another fine piece of statuary—the marble head of a woman—amidst the ruins of the theatre at Ostia, of which it is surmised to have been an ornament. The head is ascribed to the second century of our era, and was apparently copied from a Greek original of the school of Praxiteles. Professor Vaglieri is now working at Palestrina.

THE MODERN HIGHWAY PROBLEM.

BY W. ASTLEY NORRIS.

Paper read at the annual meeting of the Eastern District of the Institution of Municipal Engineers at Yarmouth on July 22nd, by W. Astley Norris, Surveyor to the Swaffham Urban District Council.

I have been invited to offer a few observations upon the construction, maintenance, and repair of highways, under the conditions of the traffic of the present period. In a paper of this description, addressed as it is to practical men, it is impossible for me to deal with the subject in a manner out of the usual course, and yet of sufficent interest to engage your attention; but I will endeavour to explain as briefly as possible the methods which I believe to be the best.

One of the most pressing questions at the present moment is the change which it is absolutely necessary to adopt in the making of macadamised roads in order to suit the altered conditions of the traffic passing over them. In recent years a more extended use of the highways has been made in this country, and the employment of traction engines, with wagons and heavy motor vehicles for conveying produce and merchandise, and also the greater use of fast-travelling motor cars, demand that some means be adopted for protecting and improving the road surfaces, thus making them more resistent against the great amount of wear created by the ever-increasing form of new traffic. There is no doubt in my mind that in a great many instances inferior material procured from a local source has been used, with bad results, productive of mud and dust.

It will not do nowadays to apply macadam to a road surface without knowing how that material will wear, and it should be laid and consolidated in such a manner as to obtain the very best results so far as its wearing capacity is concerned.

The different classes of traffic which pass over our roads will have to be con-

THE LODGE, KEW GARDENS: DETAIL OF EAVES AND DOORWAY.

sidered. It is only common sense that a length of road which carries heavy vehicular traffic near a city or town cannot possibly be compared with another length of road maintained with identically the same material carrying less traffic. There can be no model type of road which can be fitly adopted universally.

My practice is briefly as follows: Before spreading the granite or other material I fill up all potholes or uneven parts, so as to render the old surface as even as possible. The new material is then applied in the ordinary way, care being taken to see that every shovelful is evenly spread and thoroughly dry rolled until every stone is firmly bedded before the binding is put on. Just sufficient of this material is used to bed the stones, after which clean ½ in. chippings, to fill up the interstices, and swept about and rolled. We use good clean sharp pit gravel for binding purposes.

When patching becomes necessary, as soon as a hollow appears, the roadman fills it with small stone, about 1½ in., care being taken not to loosen the surface previously in any way.

Dust upon our highways will never be absolutely abolished; but we can and must reduce it. I have laid several dust palliatives, but do not think we have a remedy here sufficiently good, as I find that they answer admirably for a time, but when winter comes there is an increase in the mud on the roadways, and I fear that the wearing properties of the material are reduced considerably. Tar-macadam has been laid as a pavement in many towns and cities, but the cost would appear to make its application to county roads on a large scale prohibitive.

In the opinion of the author, the most successful system is that of tarring furnace slag. The method of preparing this road material, as in most cases of tar-macadam, is thoroughly to dry the stone by heating, and then to apply hot tar and mix thoroughly. Limestone was very extensively used at first, and selected for tar-macadam, on account of its absorbent properties, while dense blast-furnace slag of best quality, a harder and comparatively better wearing material, has since been largely adopted.

Where roads have a good face, and it is possible to tar-wash the surface at least once every four months, tar as a surface binder will undoubtedly be a success. It will not, of course, make a weak road subject to disintegration from below a strong one. A road composed throughout of thoroughly tarred material will do all that surface treatment cannot do. Failure of tar-madacam has been in a great measure due to inability to get the tar to adhere to the material to be tarred. Moisture on the material, or cooling of the tar, means failure of adherence, and the use of soft materials which would adhere quickly means failure through the road giving way owing to inferior material.

In order to construct a good tar-macadam road it will be necessary to have an ordinary road as a bottom, or to form as good a foundation as possible. If a waterproof road is desired, then it must be of tarred macadam. The bottom layer can be 4 in. gauged material, laid and rolled, with the interstices filled up with finer tar-macadam, and the whole steam rolled. The second layer should be about ¾ in. in thickness of ⅝ in. tar-macadam, and left unrolled; on this should be applied a layer of 2¼ in. gauge tar-macadam, and rolled into the ⅝ in., and when rolled ⅜ in. tar-macadam should be swept with a brush into every crevice or open joint. As a last coating, in order to join the face, a perfect layer of 1½ in. tar-macadam should be applied, and after the roller has passed twice each way over its face, ⅝ in. tar-macadam should again be swept into each crevice, so that a perfect surface is obtained.

DISCUSSION.

Mr. R. G. Coates (Norfolk) said they all agreed that the use of dust palliatives did not warrant the expense incurred. He had tried surface treatment, but roads so treated required redoing every year, and here again the expense was unwarranted. He preferred spending the money which such treatment would cost upon the construction of tar-macadam roads. It was true that a very much smaller area could be dealt with yearly, but small sections of tar-macadam were, in his opinion, better in the end than long lengths of surface treatment.

Mr. A. Paterson (St. Faiths) said that in his district he had purchased tar-macadam at a cost of only 3s. per cub. yd. over what they paid for ordinary macadam. The extra cost per yard super, of completed work averaged about 3d. Tar-painting cost over 1d. per yard super, and lasted only one year.

Mr. W. T. Unwin (March) had done in all about 20 acres of tar-spraying work. The secret of successful work lay in making the road good first. Then, when it was dry and had been well cleaned, spraying would be found fully effective and a great saving. Where wear was not excessive, painting work would last more than one year. Some tar-macadam which he had laid fifteen years ago, with the use of a horse-roller only, was practically now as good as ever. He agreed with Mr. Coates that the best thing was to spend in tar-macadam work the money allowed them, adding section by section until a road was completely done.

Mr. T. Brown (Norfolk), in proposing a vote of thanks to Mr. Norris, expressed the opinion that the expense of tar-macadam was against it, while to sectionise was to have pieces of good and bad road alternating. Mr. Coates must agree that tar-spraying enhanced considerably the life of a road. His practice was to paint hot when the surface was quite dry, and he never used chippings or similar material. His roads cost, roughly, £40 a mile per annum, and the saving of a year in their life was a valuable item.

A.A. EXHIBITION OF STUDENTS' WORK.

On Friday, July 21st, an exhibition of the work of the students of the School of Architecture of the Architectural Association was opened in the rooms of the Association at the Royal Architectural Museum, 18, Tufton Street, Westminster, and it will remain open daily from 10 a.m. till 7 p.m. until August 4th. The opening was largely attended by the students and their friends, and addresses were delivered by the President (Mr. Gerald C. Horsley, F.R.I.B.A.), Professor W. Robert Colton, A.R.A., and Sir Aston Webb, C.V.O., C.B., R.A. The Architectural Association was founded in 1847 for the purpose of furthering architectural education, and it has gradually and continuously developed its system. As we have already recorded, Professor Beresford Pite, F.R.I.B.A., has been appointed Director of Education in the ensuing session. He will co-operate with the head master, Mr. H. P. G. Maule, F.R.I.B.A., assisted by Mr. C. E. Varndell, A.R.I.B.A. in the direction of the school.

BUILDING INTERESTS IN SOUTH AFRICA.

[*(By our Special Correspondent in South Africa*

Johannesburg, July 3rd.

Building operations throughout t
country are steady, and particularly
Johannesburg is this the case; as a matt
of fact, in the centre of the city one se
evident signs of a complete transform
tion to take place in the near future. Ma
of the old tumbledown buildings are bei
removed, and contracts have been enter
into for the erection of large busine
premises, a new Union Club, a handso
new Y.M.C.A. building, and others whi
it is needless to mention in this gene
letter. The "Rand Daily Mail" structu
is almost complete, and Messrs. Norma
Anstey's eight-storey drapery establis
ment is rapidly rising roof-wards.

Progress of Building.

An idea may be gained of the act
progress being made in the building l
in Johannesburg when it is stated that
May (the figures are not to hand yet
June), 808 plans were passed by the Mu
cipality, and the estimated cost of erect
was £180,769. In the month preced
that the figures were 573 plans passed,
the estimated cost was £100,799.
figures for May are largely in advance
those for the same month in 1910, w
519 plans were passed, and the cost of
buildings was put down at £72,413.

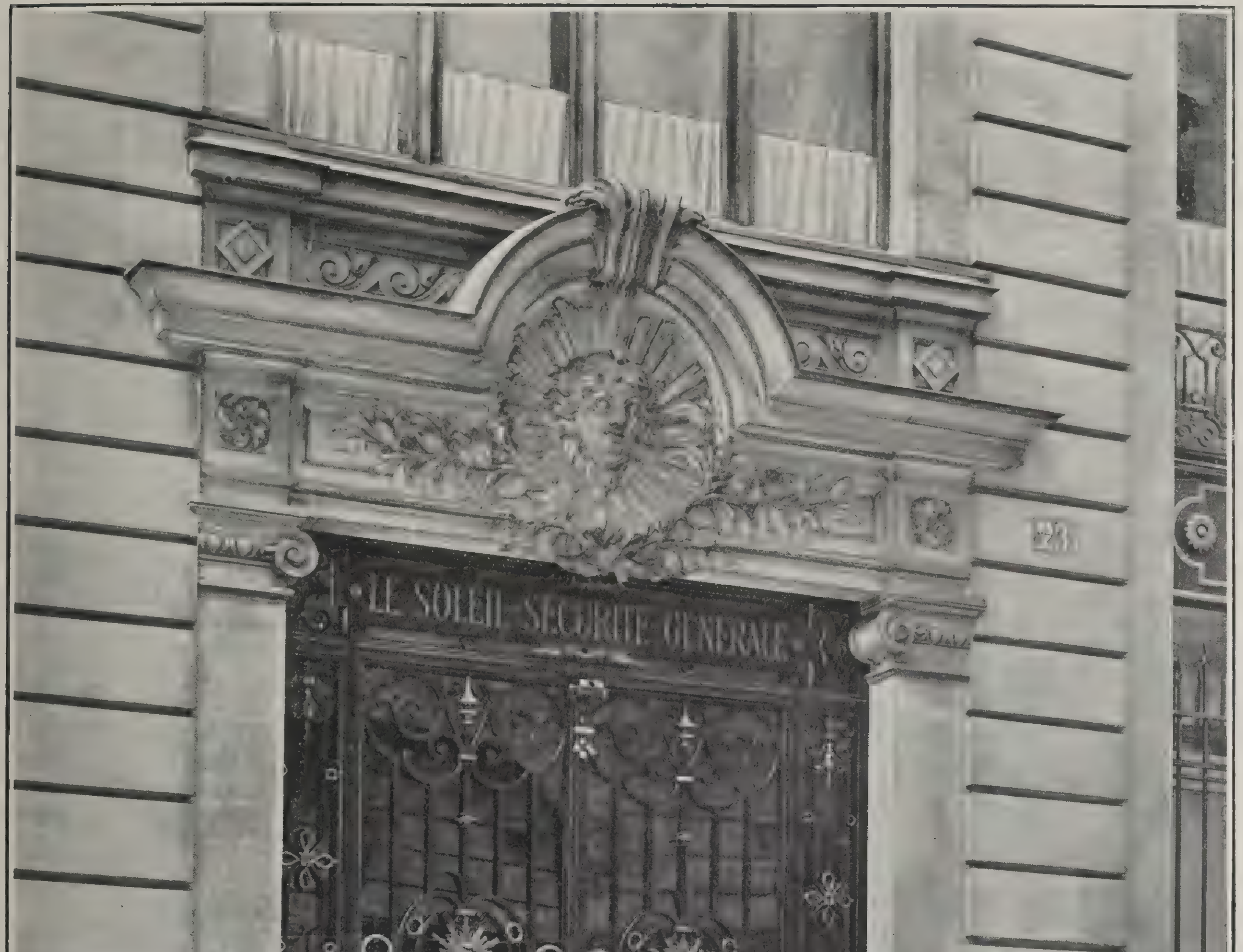
Labour Report.

Speaking of trade employment ge
ally throughout the country, it may
said that in the plumbing line things
moderately busy, and a temporary dem
for artisans during the month remai
unfilled, no men appearing as applic
for the vacancies reported. Gra
dressers have been busy. The numbe
men employed in connection with the e
tion of the new Law Courts remains fa
constant, and others are also employe
the stonework of the University build
No applications of any kind were rece
in response to advertisements
Europeans in the plastering and mode
trade required for the Eastern Prov
and South Transvaal, the latter at 22s
per diem.

Colour and Skill.

During the month the coloured sk
labour question has again loomed in
forefront of building trade to
According to a resolution of the Con
of the S.A. National Federation of B
ing Trade Employers, the chosen
gates had an interview with the Mi
for the Interior (General Smith) o
most important subject. The case
stated fairly from the Master Bui
point of view, and a request put fo
for a Parliamentary Commission to b
pointed to sit at Cape Town.
Minister, however, declined to giv
promise, but referred the deputation
Industries Commission now roaming
the country, and said the matter wo
brought before Parliament. The s
is one of the tickliest that the Gover
has to deal with, and members are
ward in expressing themselves openl
it. 'I doubt not that the coloured v
the Cape Province has something
with this aversion to handle such a
question. I may mention here
series of articles is appearing in th
"Star" from the pen of Mr. J
Brown, editor and publisher of the "
Builders' Journal," treating the

(Continued on page 125.)



A Typical Example of Modern French Street Architecture.

DOORWAY, 23, RUE DE MOGADOR, PARIS. C. LABOURET, ARCHITECT

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

coloured skilled labour from various interesting aspects, and these must prove of infinite value in keeping the matter alive n the public mind.

Training of Youths.

A question of great interest upon which he Industries Commission has taken considerable evidence has been the problem of industrial training of youths for different rades. The apprenticeship of boys seems almost as complex as that of coloured skilled labour. Mr. W. J. Horne, Organiser of Technical Education, rightly pointed out the fact that it was almost impossible to get employers in South Africa o take apprentices, owing to the high wages which had to be paid to the skilled nen, and the fetching and carrying being lone by natives. He pointed out that there nust be changes in educational methods, and organisation in this country, if the South African-born are not to be swamped by the importation of skilled labour from oversea. There is no doubt much truth n all this, and the problem of "What to lo with our boys," who will be the men of the future, is becoming as acute as any other of the great issues in the welfare of South Africa and its growing commercialism.

General Topics.

Passing on to some other subjects that re exercising the attention of builders at present I might mention that of the relaion between contractors and sub-contracors. It appears that there are no separate onditions of contract between the parties, nd there seems to be a better understandng wanted on both sides. This is what is xpected to be brought about, and what is nuch to be desired. Uniformity of workng rules in the building trade is another uestion of importance being deliberated pon in official circles at the present time. have no disputes or strikes to write bout, and will conclude with the remark hat everything in connection with the uilding trade in South Africa is going on ell and smoothly.

TRADE AND CRAFT.

Artistic Lamp Shades and Screens.

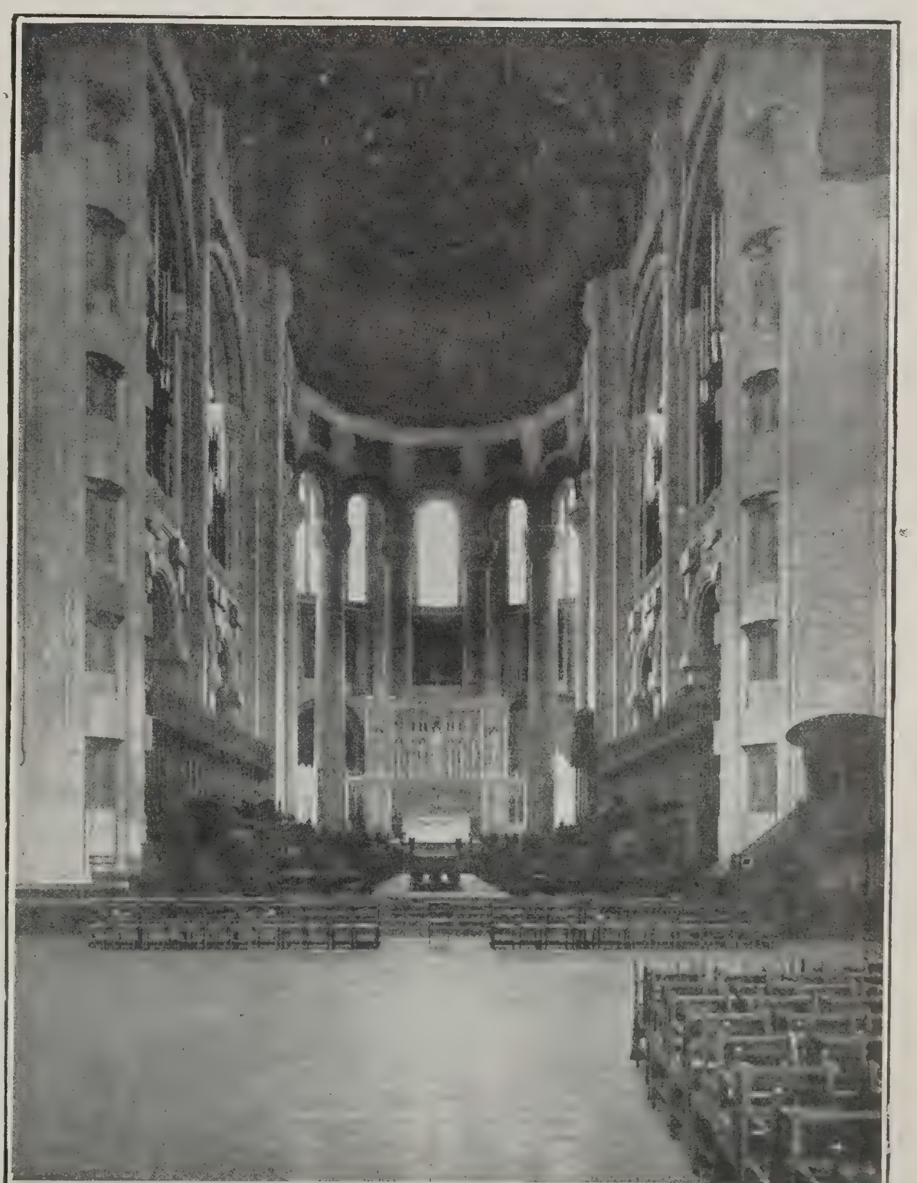
A neat little booklet illustrating some ve-and-twenty examples of the Spookie hades, has been issued by the sole agents or the British Empire, Europe, and the rgentine, Messrs. Simplex Conduits td., whose London address is 113-117, Charing Cross Road, W.C. The shades re of various shapes, adapting them for se with small or large candles, pendants, able lamps, and other services, and they re all of boldly artistic design, pattern nd colouring being in each instance ased on carefully selected models, which re characterised by quaintness or beauty, r both, and have, besides, a certain mount of historical as well as of purely rtistic interest. For example, the shade hown in colours on the cover of the booklet reproduces an old Nuremberg lantern, f a pattern that was probably familiar to uther. Others, like the "Swan," Canoe," and "Woodbine" designs, are nore elegantly ornamental; and in the ange of patterns and colours, while there such ample diversity as rather to embarras choice, there is nevertheless such general harmony as to admit of several fferent patterns being used together in e same room. It is claimed that the pookie shades, while giving all the decorative effect of stained glass, are without the cold, hard lines of that material; nd they are decorative objects by day as well as when the artificial light intensifies the richness of their colours. They are of notably moderate prices. Equally cheap, serviceable, and artistic are the Spookie screens, which may be applied in various positions to any kind of lamp with useful and decorative effect.

A Portfolio of Decorative Schemes.

An elegant portfolio of decorative schemes, showing the effects of various shades and combinations of "Pearline" and "Abbey White" enamel, has been prepared for the use of architects and others by Messrs. Robt. Ingham Clark and Co., Ltd., Caxton House, Westminster. A section of a wall, panelled, moulded, and decorated, in chaste neo-classical style, is embossed on thirteen plates, on each of which a different colour-shade is shown—the shades represented being Portland grey, pearl grey, pale Quaker green, eau-de-Nil, deep cream, pale biscuit, pale fawn, fawn, Wedgwood grey, pale Wedgewood blue, dove grey, Quaker blue-grey, and Pearline white. The effects throughout are daintily and delicately artistic, and the portfolio will doubtless be greatly in request by architects.

A WELL-PLANNED PROPERTY REGISTER.

Messrs. John Heywood, Ltd., 121, Deansgate, Manchester, forward a copy of "The Universal Mortgage and Property Register and Reminder," for the use of property owners, solicitors, estate agents, accountants, banks, insurance companies, building societies, and all who have to keep records of real estate transactions. One of the main advantages claimed for the book—which is about 13½ in. by 13 ins., and is strongly and neatly bound—is that it provides a simple but efficient system for ensuring the periodical re-inspection of mortgage securities, and will thus serve to prevent losses and liability for losses on such securities. An index to names of the parties to property agreements, and an index to dates of re-inspection, are followed by a register of particulars of properties, and in all these sections the ruling, planning, and division-headings of the book have been evidently thought out with great care by experts in this branch of bookkeeping. Thumb indexes to the various sections afford the means of instant reference.



CHOIR AND SANCTUARY ROOM CROSSING, CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK. HEINS AND LA FARGE, ARCHITECTS.

DETAILS—OLD & NEW.—XIX.

Gun Tower, Southcote Manor, Berks.

Southcote Manor is probably an early 18th century house, somewhat fallen into disrepair, and with an unhappy addition at one end of the front, which the view somewhat cunningly omits. The gun tower is a remnant of an earlier period. Whether it was built as a species of watch guard house it would now be difficult to determine. It has been used as a dove-cot—a use to which its shape easily adapts it. The doves entered by the open lantern at the apex of the tiled roof. But if one leaves considerations of ancient or original uses for the antiquarian to busy himself with, there is enough left to be of interest to the architect. In plan its shape is sufficiently unusual to make it noteworthy. It is roughly a square with the corners rounded off. The walls diminish in thickness in the upper storey, and are again still further reduced about the corbel course. The corbels which support the projecting wall are of brick. Indeed, with the exception of a few pieces of stonework, used for the execution of the more intricate work of cusps to window heads and facings here and there it is entirely built of brickwork, now mellowed to a delightful colour. An interesting feature of the roof is the way the tiles have been worked round in a continuous sweep without sign of corner or hip. This method gives a soft feeling to the roof, and is much to be commended. But it is difficult to do, as the modern tiler does not love a certain intricacy in the arrangement of the tiles to fit the sweep of the curve; and this example is by so much the more noteworthy. J.M.W.H.

GIDEA PARK EXHIBITION.

With reference to a letter on this subject which has been published by some of our contemporaries, Messrs. Durham, Carter and Durham, solicitors to Gidea Park, Ltd., have published a reply, the following extracts from which will probably be found to render the main points in the controversy sufficiently clear:—

"For the purpose of the Exhibition, the Company made and sewered the necessary roads, and laid out open spaces and provided facilities for building traffic at the following approximate outlay:—

Accounts rendered to date	£11,386
Estimated cost of completing roads	1,000
	£12,386

"This cost does not include any sum in respect of access roads or conecting sewers outside the Exhibition area.

"The total cost of land, roads, etc., therefore, stands at £22,833, and the land was priced to exhibitors at the total sum of £23,821, leaving a gross profit, if all plots were disposed of, of £988, or less than 5 per cent. This, however, does not represent any net profit to the Company. In the first place, the Company proceeded to reserve as a permanent open space 90 acres of the golf course immediately adjoining this land, the cost of which was approximately £15,000. Nothing was added to the price of the plots in respect of this open space.

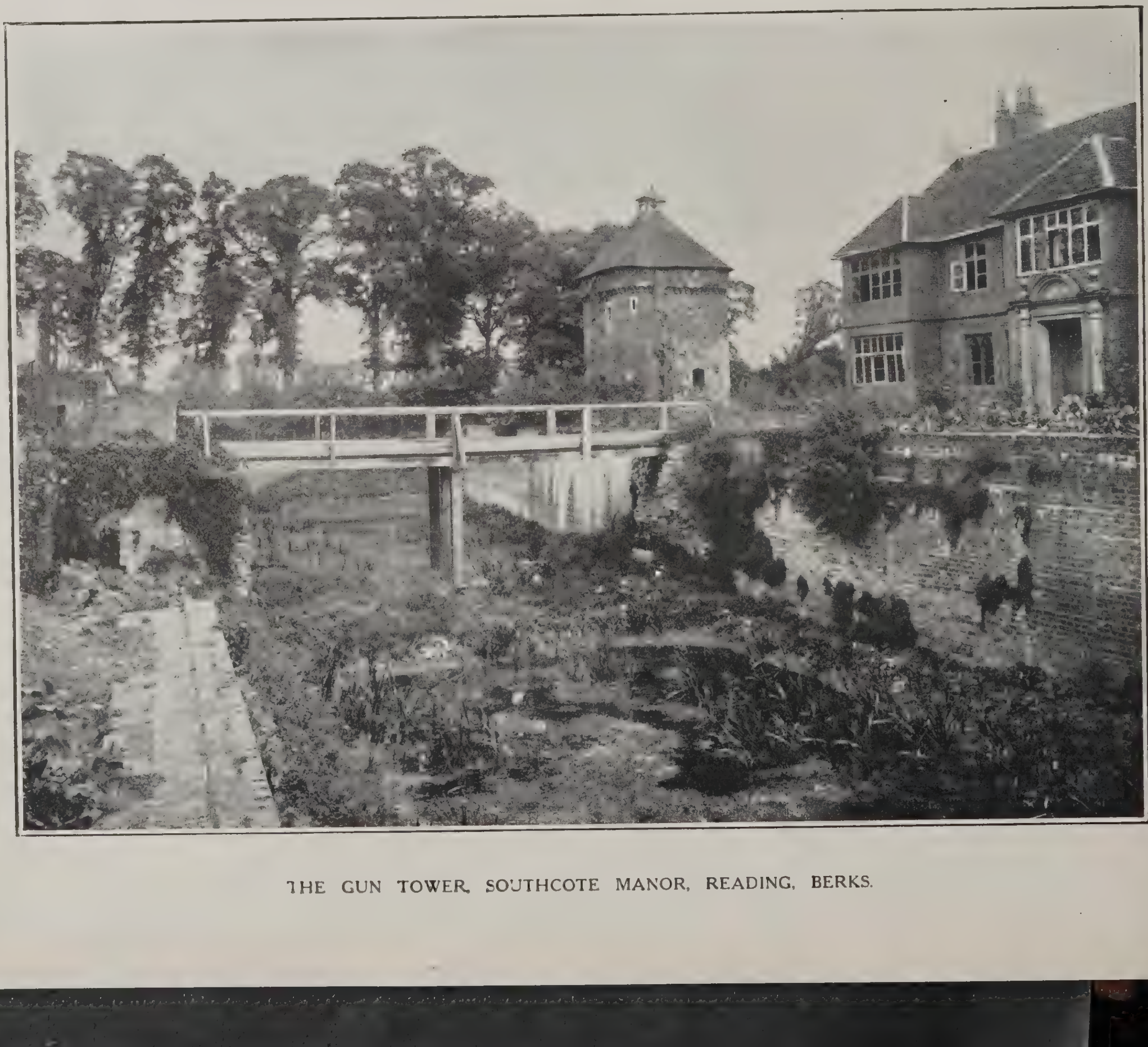
The Company further voluntarily expended upwards of £3,000 in advertising the Exhibition, and £1,400 was expended in prizes and judges' fees. Nothing was added to the price of the plots or charged to competitors in respect of this outlay, or in respect of the Company's general expenses incurred in connection with the Exhibition. One hundred and twenty-one plots were disposed of to competitors, at the capitalized price of £16,279 1s. 10d.

"Our clients, Gidea Park, Limited, hope in the future to show that an enlightened policy of town planning, and the employment of the best professional assistance in building houses, is not incompatible with dividends, but we venture to think that the above figures make it clear that they have neither made nor sought to make any profit at the expense of anyone who co-operated with them in creating the House and Cottage Exhibition.

"The critic's specific statement that the Company have charged competitors 5s. for opening and shutting the exhibition houses is incorrect. The Company have performed this service entirely free of charge.

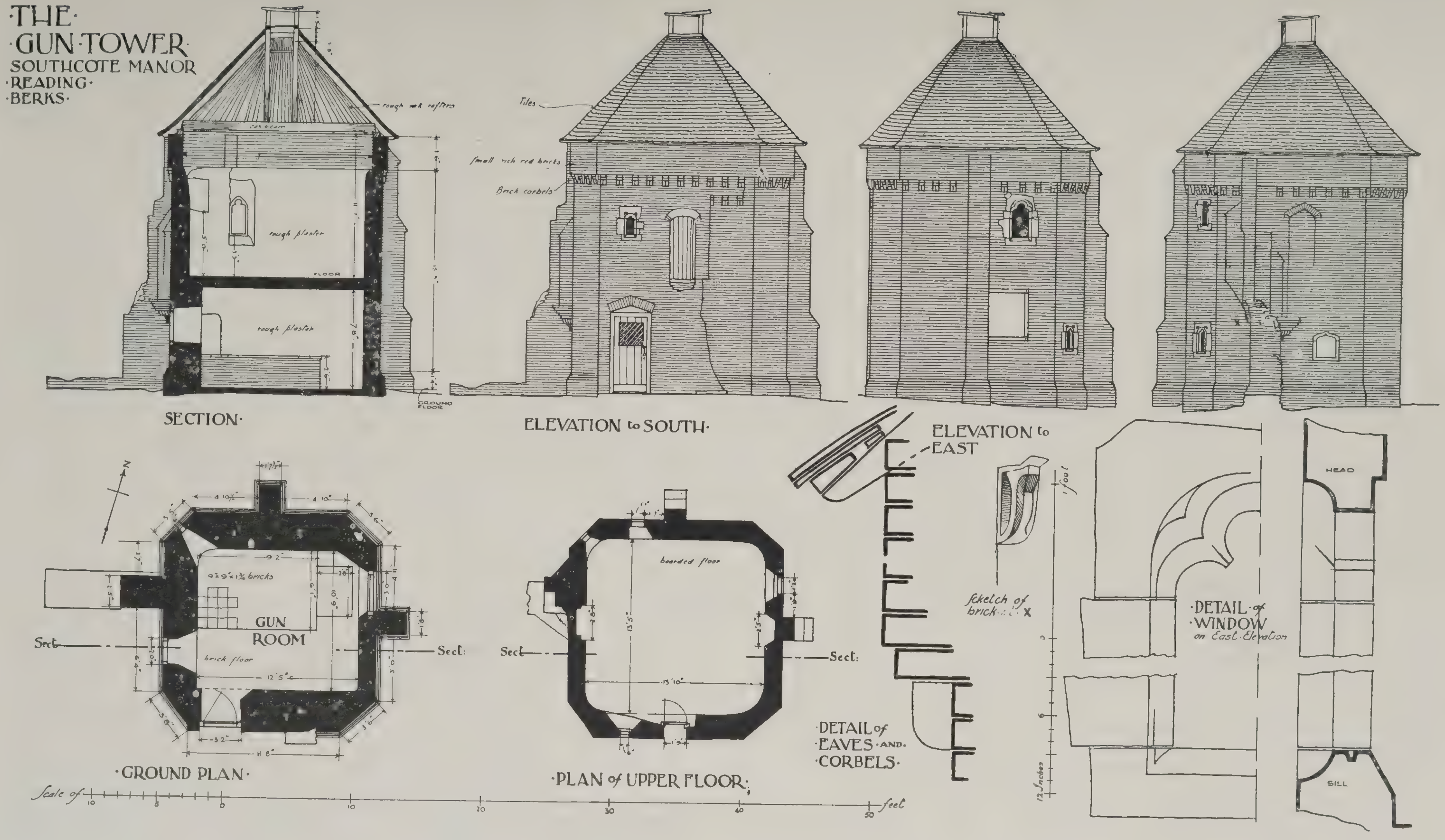
"The statement that the Company have charged at a rate of over £3,000 per annum for trifling services is simply ludicrous.

"The facts are as follows: For the convenience of a few competitors, the Company undertook to engage workmen to clean their houses and water their gardens. The Company has performed these services for 28 competitors only, and are receiving in all £7 11s. per week, which, if services are required until the end of the Exhibition, may amount to about £100 Out of this sum the wages of three men and three women, and the cost of garden hose and supervision, etc., have to be paid, which will not leave, and was not intended to leave, any substantial sum to set against the Exhibition expenses of the Company."



THE GUN TOWER, SOUTHCOTE MANOR, READING, BERKS.

·THE· ·GUN·TOWER· SOUTHCOTE MANOR ·READING· ·BERKS·



HIGH-PRESSURE WATER POWER WORKS.

BY L. ZÖDEL, OF ZÜRICH.

Portions of a paper read at a meeting of the Institution of Mechanical Engineers.

It was not the intention of the author to lay down rules and principles which govern the design and construction of high-pressure water-power works, but rather to review the progress made in such plants of recent years, and to endeavour to bring forward the relative merits of different designs for different purposes. Keeping this object in view, reference was made to a number of modern plants, short descriptions of which were given. Not only engineers of every branch are represented on work of this kind, but surveyors, architects, miners, railroad men, besides engineers of the mechanical and electrical professions, have to work hand in hand, in order to secure the best results. In some cases geologists and even weather prophets have to be consulted.

The utilization of high-pressure water-powers represents the later portion of the rapid development which has occurred in hydraulic works during the last 20 years. Such powers are necessarily in mountainous districts, and may be at some considerable distance from thickly populated centres where a demand exists for power for lighting, traction, and industrial work. Therefore, comparatively low falls were more in use until the question of long-distance high-tension electrical transmission could be looked upon as a sound technical and commercial proposition. This has only been satisfactorily solved within the last few years.

Transmission Over Long Distances.

At the Frankfurt Exhibition of 1891, a power transmission at Laufen-on-the-Neckar, over the then extraordinary distance of 175 km. (108 miles), was brought into actual use, and proved that transmissions over still greater distances were equally possible and were only a question of time. This laid the foundation for present day high-tension electrical transmission. But at that time only a couple of hundred horse-power were dealt with, and it required much hard work, with innumerable tests and many failures, before the thousands or even hundreds of thousands of horse-power could be transmitted safely within the requisite economical limits, over distances exceeding 200 km. (125 miles).

Three Classes of Water Powers.

It is necessary to divide water-powers into three classes, namely, low, medium, and high head. Certainly there is no well-defined limit, but for general convenience we may call low-pressure plants those with a head of from 1 to 10 m. (32.8 ft.) or to perhaps 15 m. (49 ft.); medium pressure those from 10 to 100 m. (328 ft.); and high pressure those over 100 or 200 m. (656 ft.). The water-turbine builder has a much sharper and more precise distinction. He calls low-pressure plants those in which the turbines are placed in open flumes; medium-pressure those in which the turbine is placed in closed casings (such as pipes, drums, spirals, etc.); and high-pressure those in which impulse-wheels are employed.

It is also possible to classify such plants according to the volume of water utilized. Thus with the same head a station might be termed medium-pressure or high-pressure according as the discharge utilized was large or small. A plant with, for example, 100 metres head and a very large volume of water, say 20m³. (716 cub. ft.) per second would be considered one of medium head, because a closed reaction turbine having a draught tube would be
employed; yet the same head with only
1 m³ (35 cub. ft.) per second would cer-
tainly constitute a high-pressure plant, fo
impulse turbines would be installed.

High-pressure plants usually work ou
considerably cheaper than low-pressur
for the same power, but a long transmis
sion line may so increase the capital out
lay on the former that a low-pressure sta
tion nearer the consumer is preferable
All such questions must be carefull
worked out for the particular case in hand

Advantage of High-pressure Plants.

A very great advantage possessed b
high-pressure plants over low-pressure
and shared to a large extent by medium
pressure also, is the readiness with whic
the irregular flow of rivers may be regu
lated to supply a constant-power deman
by means of storage reservoirs and weir
With these it becomes possible to utiliz
the whole of the rainfall of a district, an
to store the water till required by the pow
consumer. Thus we may say that suc
storage plants are by far the more ration
proposition. Storage however increas
the cost of a station very considerab
and the amount of such storage must
limited to such capital charges as will
borne by the plant as a paying conce
The greater the head of water, the mo
rational will a storage reservoir be, sin
the same quantity of accumulated wat
will represent a proportionately larg
store of energy.

Questions of national economy, and
political or even strategic importance a
often served by water-power stations,
sides the immediate interests of the p
moters of the scheme. This is especia
the case in countries such as Switzerla
which have no coal or other natural fu
and have to depend on foreign States
their supply; hydro-electric stations rep

"THE STOCKS," WITTERSHAM, KENT. W. A. FORSYTH, F.R.I.B.A., ARCHITECT.

nt the foundation of their industrial curity and independence.

Many large high-pressure stations with th natural and artificial storage reser- irs have been built within the last few ars all over the world. Some of these re described, reference being more par- ularly made to the pipe-lines and con- its carrying the water from the lake or er to the turbines. For it is exactly these pipe-lines that too little attention usually devoted. Many people, and not few engineers, consider that the pipe- e is a secondary part of a hydraulic wer plant, so long as the thickness of the e allows a good factor of safety against pressure, and a continuous line has n laid over the ground from the intake the turbine. Hence it is that pipe- es are often built by engineers who experts in the choice of material, and the manufacture of a pipe, but who do understand the essentially important ctions which a complete pipe-line, and ecially a high-pressure pipe-line, has to il. The general arangement, the rela- dimensions of different parts of the e-line, the methods of anchoring and cing of fixed points, are all such im- tant factors that they can only be pro- ly determined by the turbine builder, ause on them depends as to a very great ent the proper working of the turbine hence the success of the whole plant.

mong the works described were the owing:—The Necaxa Power Works, original Necaxa power-station of the xican Light and Power Co. The axa river flows over an extensive eau of the Mexican table-land, and at part of its course descends abruptly series of falls for a height of over m. (1.312 ft.) into a deep valley. This d is utilized for the power works.

ower works of special interest have recently erected in Norway, and of e one was mentioned by reason of difficult work carried out on the pipe- . This is the power-plant at Tysse- n, near Odda, in the Hardanger Fjord he west coast, where 33,600 h.p. are utilized and transmitted to carbide, amide, and other factories at Odda, stance of about 6 km.

typical high-pressure power-station in zerland is that of the Kraftwerk Brusio pany, which utilizes the water-power e Poschiavino river in the Poschiavo ey in the Canton Grisons, on the south of the Alpine Chain between the Ber- Pass and the Italian frontier near no. About 55,000 h.p. are developed, greater part of which is transmitted to industrial districts of Northern Italy a transmission line of 150 km. (93 s) length. The total head available out 1,000 m. (3,280 ft.), and this is in two stages.

e River Siagne rises in the Alpes times province of South Eastern ice to the north of Cannes, and is , by reason of its clear spring water, pply the town with drinking water an intake near the village of St. ire. The power-station is situated im- ately above this intake, and utilizes a of about 348 m. (1,142 ft.) of the e.

e Siagne power-station is used as one e hydro-electric plants which feed igh-tension system supplying power ice and Cannes.

The Author's Conclusions.

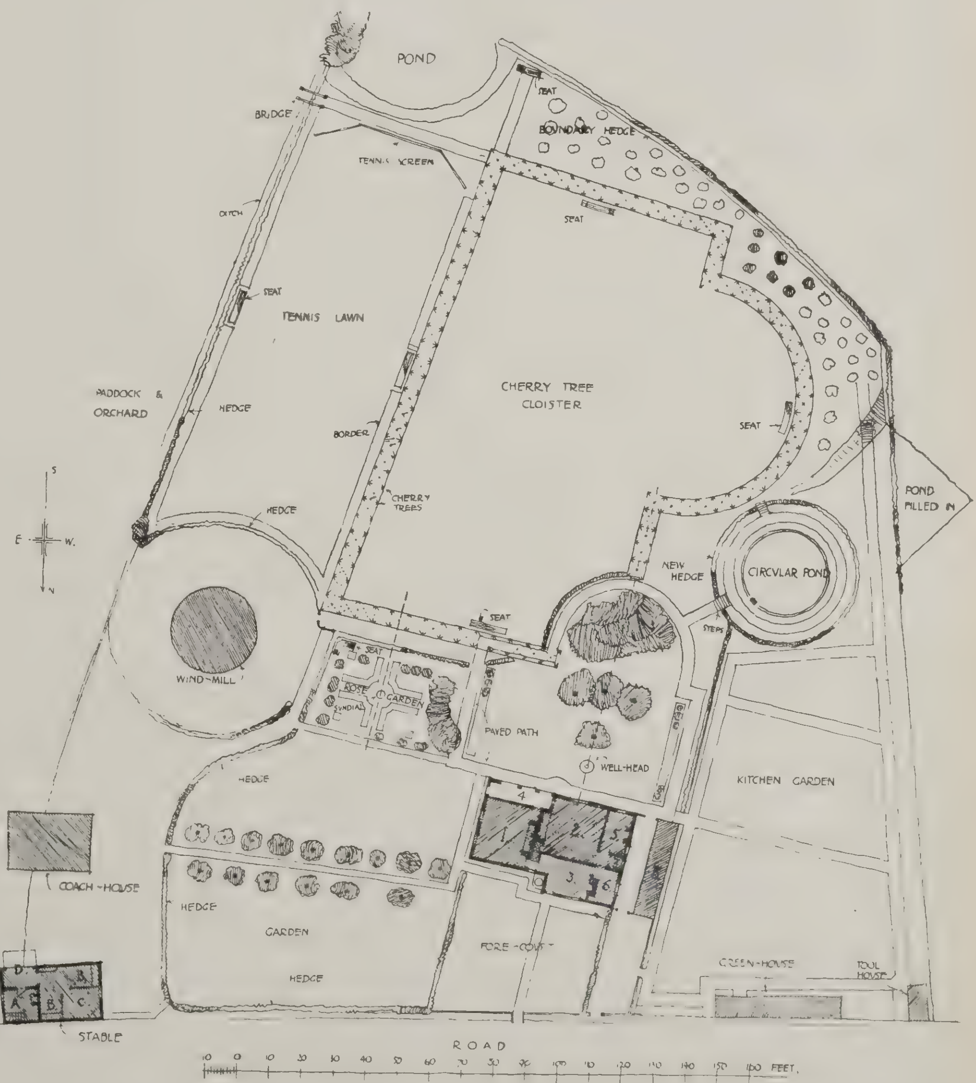
e water-carrying system of a high- ure hydraulic power scheme cons vo parts: the low-pressure part to most of the horizontal distance be- the lake or river-intake and the power-house, and the high-pressure part to give the operating head for the station. The high-pressure pipe-line represents one of the most costly items of the plant, and is therefore made as short as possible by taking the low-pressure conduit to the nearest advantageous point above the power-house. There are two main types of this conduit: that in which water flows under pressure, and that with water flowing freely in an open flume. Both these types were illustrated in this paper. The former may be further subdivided: into (1) the pressure-tunnel arrangement leading to a deep penstock-chamber, as in the case of the Tyssedalen and Brusio installations; and (2) the low-pressure feeder-pipe arrangement connecting to a receiver with a stand-pipe, as at Necaxa and Rio de Janeiro. Both of these systems allow of the total head available at any time in the reservoir to be utilized, even with large variations in water-level.

The type of conduit with open flume cannot, however, utilize any head in the reservoir, and this must be lost. In the case of a long conduit, a balancing reservoir must also be constructed to provide for any sudden increase in the load, since the open flume will not draw a greater volume of water to supply a greater demand, as happens automatically with the pressure conduit. This case is illustrated in the Siagne power-station. Another example is the well-known Kinlochleven plant of the British Aluminium Co. in Scotland. The choice of the arrangement of conduit most suitable for a power scheme depends entirely on the particular conditions of the works, and no rule can be laid down.

Members of the Institution of Mechanical Engineers are indeed the representatives par excellence of steam and steam-power. Water power will hardly be of much importance in their own country, compared with coal: but it may play a very great part in the development of the resources of the vast colonial possessions composing the British Empire.

"THE STOCKS," WITTERSHAM, KENT.

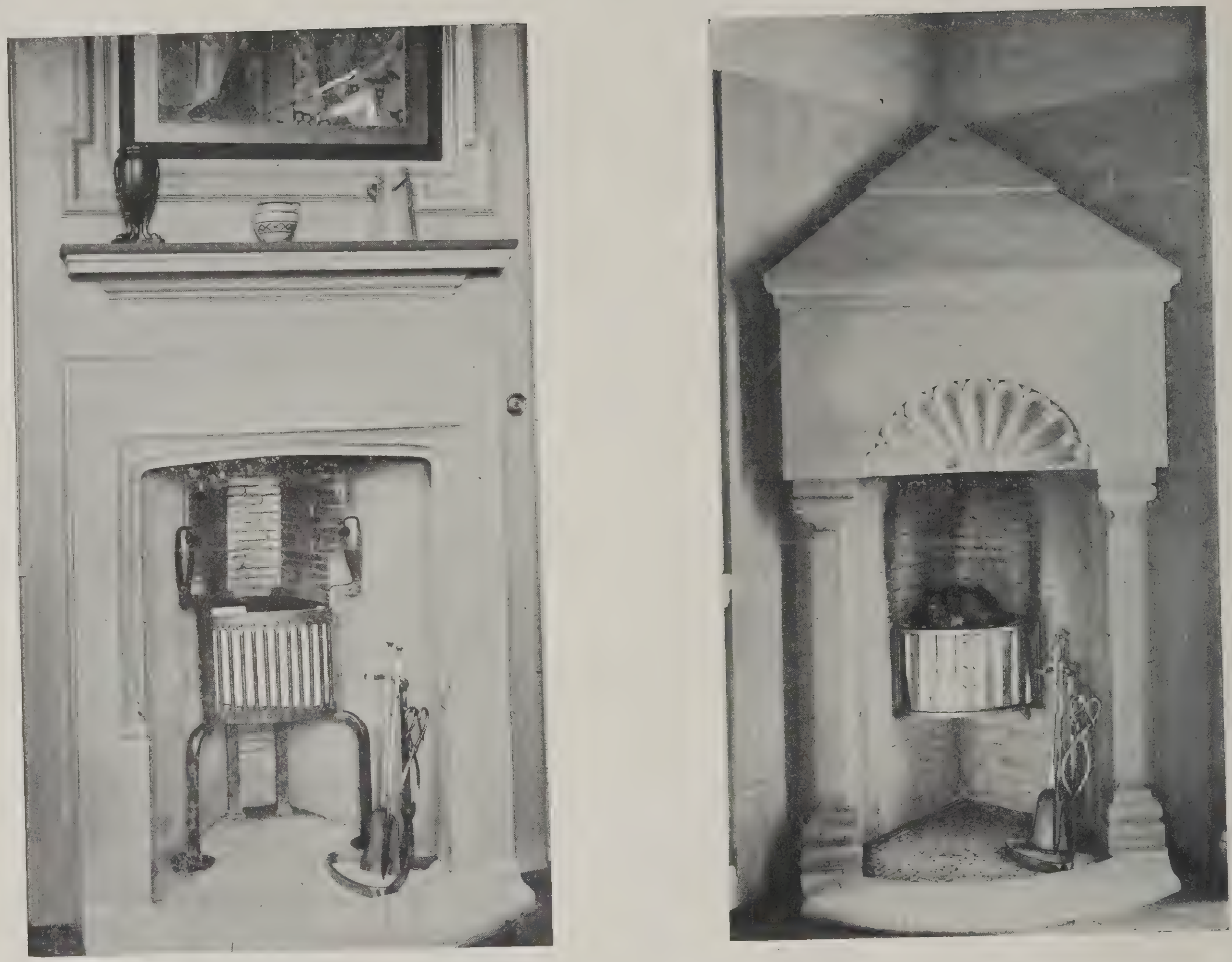
This old cottage was carefully restored some years ago for Mr. Norman Forbes-Robertson, by Mr. W. A. Forsyth, F.R.I.B.A. (of Messrs. Forsyth and Maule, Architects, London). Additions were made to provide the desired accommodation, and the garden was laid out according to the architect's design. The chief feature of the garden is the pergola of hop poles with young cherry trees trained over it. A rose garden to the east of the house has also been provided, next to the old windmill.



House: 1, Sitting-room; 2, dining-room; 3, entrance hall; 4, veranda; 5, kitchen; 6, pantry; 7, larder; 8, outbuildings and offices.

Stable: A, Harness-room, BB, stalls; C, loose box; D, covered washing place.

"THE STOCKS," WITTERSHAM, KENT: GROUND-FLOOR PLANS OF HOUSE AND STABLE, AND PLAN OF GARDENS.



In a Bedroom.

In a Dressing Room.

STONE CHIMNEYPIECES AT "ARDKINGLAS," ARGYLLSHIRE. SIR R. S. LORIMER, A.R.S.A., ARCHITECT.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.

HALF-YEARLY MEETING.

The half-yearly meeting of the National Federation of Building Trades Employers of Great Britain and Ireland was held on Tuesday, Wednesday, and Thursday, July 25th-27th, at Newcastle-on-Tyne.

On the Tuesday, the meeting of the Executive Council was held in the Prince of Wales Room, County Hotel, where the Lord Mayor of Newcastle welcomed the members of the Council. The proceedings at the Council meeting were, of course, conducted in private. After the meeting, the councillors had luncheon at the County Hotel, and then went by river to visit the works of Messrs. Armstrong, Whitworth and Co. In the evening, the Federation banquet was held at the County Hotel, when Mr. J. W. White, who presided, said in the course of his address: I think that we may congratulate ourselves on the fact that during the present year there has practically been no dispute in the building trades of this country, except that at Nottingham, with the labourers, which is now settled; so that for more than five years the Conciliation Board we set up has been effective in preventing strikes. Nevertheless, there is still much work for the Federation to do, and there are many directions in which energetic action is necessary in order to protect our interests as employers. It especially behoves us, for instance, to keep a sharp outlook on legislation. Almost before we have had time to grasp the true significance of the land clauses of the Finance Act, we are confronted with the National Insurance Bill. This Bill, as drafted, would have a far-reaching effect on the cost of production, and we are bound to scrutinise it with the utmost care, and to oppose with all our strength what we find to be injurious not only to our own interests as employers, but to the interests of all who would suffer from any further depression of the great industry we represent. It has been stated that the Chancellor of the Exchequer, in preparing this Bill, has called in the assistance of representatives of the trades unions and friendly societies; yet, as far as we have been able to ascertain, no recognized representatives of organized employers were in any way approached with the object of ascertaining their views upon the matter. This has placed the employers in a most unfair position compared to the other parties interested. This is a matter in which we cannot accept the views of politicians as conclusive. Time should be given for a thorough consideration from the industrial point of view of the provisions of the Bill, and to formulate their objections. This cannot be done at all adequately if the Bill has to be passed this session, nor will it be likely to receive
anything like adequate discussion in Pa
liament, as it is far too complicated
subject to be got through properly in suc
a short time. See what happened in th
House the other night. Clause 11, whic
is of vast importance to employers (as we
as workmen) was forced through a jade
House by an all-night sitting, althoug
there has been no suggestion of anythin
in the nature of obstruction of the Bil
I think that one of the first objectio
that employers have to the Bill is that
does not include insurance of workmen
compensation. When the Workmer
Compensation Act was first proposed
were told that its cost would only be
very small matter indeed. Since its i
troduction, the cost to employers has go
up four to six times as much, so that wh
was light-heartedly assumed to be a ve
trifling matter has become a serious bu
den to employers, and I think an enqui
into the cause of this was more necessa
before proposing any further schemes th
would add to the cost of production.

Mr. White then dealt with malingeri
and the exaggeration of small accide
and illness encouraged by such legislati
as that proposed, and declared that
tendency of the present Insurance
will be to increase the cost of the Wo
men's Compensation Act to the emplo
and not to bring any relief. Insura
against unemployment, he thought, ou
to be dropped. He dealt drastically w
clauses 11, 43, 46, and 51, and conclu
as follows: "Why should the emplo
be called upon to pay for insurance
sickness and unemployment? He recei
no benefits; and if the nation thinks

ıas a duty to perform in this matter, let
he nation pay for it. Will the Bill have
ıll the beneficial effects the Chancellor of
he Exchequer expects? We have no less
lesire than he has to bring about a healthy
ınd contented nation, living in comfort
.nd happiness. But this Bill will largely
lestroy the cultivation of independent
hrift, and that must have an important
ffect on national character. We have had
o many reforms that were to cure the ills
f the nation that have not materialized,
hat one may be permitted to question
hether this is not one more of them.
ime, I suppose, will prove what its bene-
.ts will be, and we shall then know its
ational influence. Let us hope that it
ill be all that its promoters desire, and
hat after all it will not prove a national
urse by causing wholesale decay of inde-
endent effort."

A Civic Welcome.

On Wednesday morning, at the King's
Iall of the Armstrong College, the
)eputy Lord Mayor (Councillor C. S.
hortt), in the unavoidable absence of the
ord Mayor, welcomed the delegates to
Jewcastle, and said that whether they
onsidered the city as the possessor of
rchitectural beauties or as a hive of in-
ustry, it spoke for itself more eloquently
nd with greater power than he could. He
ommended the objects of the Federation,
nd alluded to the good relationship which
xisted between builders and architects,
the excellent work that was being done
y the Conciliation Board for settling dis-
utes, and to the watchful eye which the
ederation kept on legislation. He be-
eved that the Federation was altogether
ı important factor in promoting the pros-
erity of the country.

The President of the National Federa-
on, Mr. J. W. White (Sunderland), in
knowledging the Deputy Lord Mayor's
raceful words of welcome, said that he
elieved the delegates would go away
om Newcastle with most kindly and
ost pleasant recollections of the city.
hey would carry away with them not only
most vivid impression of its magnitude
ıd its industrial importance, but also
ry pleasant memories of the grace and
ırdiality with which they had been re-
ived by its civic representatives—by the
ord Mayor on Tuesday, and by the
eputy Lord Mayor on Wednesday.

The General Meeting.

The Deputy Lord Mayor having retired,
e President, Mr. J. W. White (Sunder-
nd) took the chair.

Federation Finance.

The National Secretary, Mr. A. G.
hite, reported that the Council on the
evious day had considered the report
ıd recommendations of the Administra-
ve Committee on Federation finance,
ıd recommended that the matter be re-
rred back for further consideration, add-
g a rider to the effect that the Federa-
on should be debited with 50 per cent.
duction of the contributions to the re-
rve fund for this year only.

Mr. Blackburn (Newport) urged the
sirability of maintaining an effective re-
rve fund. He hoped that the reserve
nd would eventually and soon be in-
eased to double its present amount,
cause of the vital importance of the fund
a source of strength to the Federation.

The Council's recommendation was
opted.

The Half-yearly Report.

The Secretary read the sixty-fifth half-
arly (interim) report, of which a brief
mmary follows:—

The County Federations comprising the Federation remain as last reported. Official relations with the operatives are satisfactory, but there have been in some districts indications of unrest and of revolt against trade union leadership, probably as a reflection of what has occurred in certain other industries. It is probable that soon the conciliation scheme in our industry will be severely tested, and that employers' associations will do wisely to have their organisation ready to meet every eventuality.

Boards of Conciliation.—Two meetings of the National Board have been held since last report. The first dealt with an adjourned appeal of the Birmingham carpenters and joiners, and it was eventually decided that this question be referred back to the local board for consideration in September. The second was the annual meeting, when it was decided to re-appoint the special sub-commitee on the importation of work from lower-paid districts, as its labours were not yet completed. It was also decided to recommend the local boards to approach local architects on this question, with special reference to joiners' and masons' work. The Midland Centre again recommended that builders' labourers should be admitted to the scheme on the same terms as operatives of the skilled trades; and it was decided to recommend the parties to the conciliation scheme to adopt the proposal, and that there be two labour representatives on each of the Centre and on the National Boards.

The annual meeting of the Joint Committee of Appeal under the Agreement with the N.A.O.P. was held on June 2nd, when reference was made to the Y.M.C.A. case at Manchester, and to the difficulty experienced in getting the local operatives to conform thereto.

The report gives details of the appeals from Birmingham, Manchester, Bradford, and Hull.

Several disputes have been decided, or are in course of decision, by Board of Trade arbitrators, notably, Wigan joiners, and Southampton all trades, also masons, bricklayers and joiners at Bristol. In the Southampton case the decision was to advance all trades ½d. per hour. In the case of Nottingham, the builders' labourers refused either arbitration or conciliation, and struck. The strike lasted eight weeks, when, through the good offices of Mr. Appleton, the General Secretary of the Federation of Trades Unions, the labourers agreed to refer the dispute to a locally constituted joint commitee of employers and employed, with an independent chairman. The result was an advance of wages of ½d. per hour granted to the labourers.

The strike was characterised by good temper on both sides. No imported labour was introduced. The employers just sat tight and waited; and it is worthy of record that not one gave in or proved in any way disloyal. Indeed, the Nottingham Association emerges from the struggle distinctly stronger both numerically and morally; and the association, which was re-organised a year or two ago on the lines recommended by the National Federation has stood a rather exacting test in a very satisfactory way, and deserves the thanks of the Federation.

With respect to the agreed form of contract, it is stated that a case reported from Newport and remitted from the last annual meeting was considered, and the opinion of the Institute of Builders taken thereon. It turned on the question of the finality of the architect's certificate, and it was pointed out that if a client thinks fit to call in question his architect's certificate he is entitled to do so by proper notice when a dispute arises calling for arbitration under clause 32, on the initiative of either party. The architect's certificate is strong evidence in favour of the builder's case, but must, if necessary, be proved true in fact. On a disputed certificate the builder can go at once for arbitration if the arbitrator is named in the contract. It is understood that the case in question was eventually settled on these lines. A memorial sent up from Lancashire proposing that clause 27 should be altered to read: "Prime cost sums or the initial p.c. applied in specifications or bills of quantities to goods obtained by the architect or proprietor shall mean the list price and shall be subject to the trade profit," was referred to the Institute of Builders, which has in hand the question of p.c. sums at present. The Institute of Builders has prepared revised draftings of clauses 20 (by which specialists are made sub-contractors), and clause 28 (re provisional sums) in connection with a draft of a proposed agreement for sub-contracts with specialists. These are being sent round to our branches for consideration and report, and afterwards the Administrative Committee will prepare recommendations thereon to the annual meetings.

Under the heading, "Protection of Members," it is mentioned that letters from the Federation to a leading London bank and to a London architect with reference to country jobs for them where tenders were asked for without quantities being issued met with a sympathetic response; and that the Liverpool Association had an interview by deputation with a special committee of the City Corporation re independent arbitrator in municipal contracts.

Domestic Supply Services.—The resolution of the annual general meeting in regard to the question of demarcation of work between plumbers and hot water engineers was duly communicated to the parties, and well received. Each party states its intention to try to bring about a national settlement as requested by this Federation, and a joint conference on the subject is probable.

During the past half-year, some 34 articles upon matters of importance to the building trade and to the interests represented by this Federation have appeared in the official journal, as well as reports received from associations and federations.

The Federation was well represented at the Town Planning Conference at Liverpool.

With regard to Home Office enquiry on lead poisoning in house painting and decorating trade, it is stated that evidence was tendered before the committee by several members of the Federation, and it is added that as the question at issue is an important one, involving either the prohibition of the use of white lead in the house painting and decorating trade, or the imposition of onerous regulations to govern its use, the branches of the Federation have been fully advised and requested to give evidence also.

International Federation.—In accordance with the decision of last general meeting, the question of joining the International Federation of Building and Public Works Contractors was referred to the branches. The reports are generally adverse to the proposal.

In the report, references are also made to action taken or advice tendered as to telephone transfer, electrical wiring and fitting, the Industrial Training League, the Quantity Surveyors' Association and bills of quantities, the affiliation of the South African Federation, the financial position of the National Federation, the Trades Union (No. 2) Bill, the National Insurance Bill, the Finance and Revenue Act, and the Offices Regulation Bill.

It was stated from the chair that the interim report would be embodied in the Federation's annual report.

Discussion of the Report.

Mr. Jas. Wright (Nottingham) Vice-President, drew attention to the statement in the report that the conciliation scheme was likely to be severely tested. He believed that the prognostication would be realised, especially if trade improved, as they hoped it would. In Nottingham, for instance, the joiners, who had got an advance of wages through the medium of the conciliation scheme were sympathetic to men who were on strike, and were not represented on the Conciliation Board. He therefore urged the local associations to be ready for any emergencies that might arise.

Mr. S. Smethurst (Oldham) said that, according to his experience and observation, the employers had in the past found the leaders of the men honourable and reliable, and entitled to all respect, but the irregular action of some of their followers embarrassed them with many difficulties. Whatever the men themselves might endeavour to do, he did not think that the leaders of the men would countenance any breach of the understanding that had been arrived at.

The report was adopted.

Colonial Membership.

The President moved certain minor alterations to rules, and explained that, shortly put, the object of the alterations was to admit Colonial members.

The propositions were agreed to.

It was resolved not to take any further action as to the desirability of becoming affiliated to the International Federation of Building and Public Works Contractors.

The National Insurance Bill.

The Secretary presented a report on the National Insurance Bill, which Bill had been carefully considered by the branches and the Administration Committee of the Federation, and also by the Employers' Parliamentary Council. The chief objections to the Bill were summarised in last week's journal, and need not be here restated. Special attention was invited to the Secretary's proposal that the building trade, which is still suffering from depression, should be exempted from the operation of the Bill until, say, 1916.

Commenting upon this report, the President said the Council's recommendation was that a joint deputation representing the Federation and allied interests should ask the Chancellor of the Exchequer and the President of the Board of Trade to reconsider certain provisions of the Bill which appeared to them to be likely to have a very injurious and depressing effect on the building industry. He thought that while it might not be practical to alter the principle of the Bill, much might be done obtain such a revision of the details as would render them less injurious in their effect on the industry.

On the motion of Mr. Kay (Rochdale), it was agreed to ask the Chancellor of the Exchequer and the President of the Board of Trade to receive such a deputation as that suggested.

A recommendation of the Executive Council with respect to the Official Journal was discussed and adopted.

NEW WORKING RULES AND CONDITIONS FOR HEATING ENGINEERS.

After prolonged negotiations, an agreement regarding working rules and conditions has been completed (says the "Journal of the National Association of Master Heating and Domestic Engineers"), and ratified between employers represented by the National Association of Master Heating and Domestic Engneers and workmen represented by the National Union of Operative Heating and Domestic Engineers. This has been duly signed by accredited representatives on behalf of the above-named masters' association and the operatives' union, and the new agreement takes effect on and from the 1st July, 1911.

It supersedes all local and district agreements, and is recommended for universal adoption throughout the country. The establishment of a standard to work to and of uniform practices, such as are provided in the new agreement, should be of great advantage to employers, and is, of course, not in any way inimical to the workmen.

The clauses of the agreement are as follows:—

(1) Rate of Wages.—The recognised rate of wages for each district to be observed.

(2) Hours of Work.—The present recognised working hours of each district to be observed.

(3) Overtime.—(a) When the workmen ask to be allowed to work overtime, and permission is granted by the employer, such overtime shall be paid at ordinary single time rate. (b) Overtime, when worked at the request of the employer but not otherwise, shall be paid for at the following rates, viz.:—From leaving off time till 8 p.m., time and a quarter; from 8 p.m. till starting time next morning, time and a half; on Saturdays, from leaving off time till 12 o'clock midnight, time and a half; on Sundays and Christmas Day, double time. (c) No overtime shall be reckoned until each full day's ordinary time has been made.

(4) Outworking Allowances.—(a) For the purposes of this rule the job is to be considered as equivalent to the shop, and the workmen are to be on the job and leave the job at the required hours. When the distance from the workmen's home to the job exceeds the distance to the shop, walking time to be allowed for such excess at the rate of three miles per hour. (b) When the workmen are working at a distance and returning home daily, tram, 'bus or railway expenses are to be allowed both ways. (c) When the workmen are from home and staying away over night, a lodging allowance of 1s. 6d. per day is to be made. Sunday to be paid for as an ordinary day, viz.:—at 1s. 6d. (d) Travelling time and expenses to be paid for at the start and finish of a job. Men working not more than 20 miles from the shop shall be allowed to return home each week-end, not more than 50 miles once a month, and not more than 100 miles once every eight weeks. Travelling expenses to be paid both ways if the workmen return on these intermediate occasions. If they elect to stay at the job travelling expenses to be paid one way only. Workmen to travel home in their own time: on return, travelling time from the shop to the job to be paid for. (e) When working at a distance of over 100 miles, return arrangements to be made by mutual agreement.

(5) Payment of Wages.—Payment of wages to be made at noon on Saturdays, or by other mutual arrangement, and to b paid at the shop or on the job.

(6) Termination of Engagement.—On hour's notice to be given or one hour' time to be paid by either side on termin ating an engagement.

(7) Employment of Workmen.—Em ployers may employ any workmen, an workmen may take employment with an employer whether the employer or work men belong or not to the Employers' Assc ciation or to the Operatives' Union re spectively.

(8) Apprentices.—Apprentices shall b offered facilities for acquiring a practica knowledge of their trade, and be encou aged to obtain a theoretical knowledg thereof, as far as circumstances permit.

(9) Conciliation Rule.—With a view t the adjustment of disputes, and to avoi stoppage of work, it is agreed that an differences between an employer and an of his workmen which they have failed t settle mutually, may be brought before local conference composed of an equ number (not exceeding three) of represe tatives of the local members of the En ployers' Association and of the local bran of the Operatives' Union. It shall be con petent for the general secretaries of t Employers' Association and of the Oper tives' Union to attend and take part such local conference. Failing settleme at a local conference of any questi brought before it, either party may ref the matter to a central conference co posed of an equal number (not exceedi five) of representatives of the Council the Employers' Association and of t Executive of the Operatives' Union. Fa ing settlement at a central conference any question brought before it, the cent conference shall have power to make app cation to the Board of Trade for t appointment of a Conciliator or Arbitra under the Conciliation (Trade Disput Act, 1896, or to make application for Court of Arbitration, under the memor dum of the President of the Board Trade, dated 1st September, 1908. event of an application being made to t Board of Trade, the decision of the C ciliator or Arbitrator or Court of Arbit tion appointed shall be final and bindi on all parties. Pending a decision (loc central, or otherwise), there shall be stoppage of work, and work shall proc under the current conditions.

(10) Alteration of Rules.—Six mont notice of any proposed alteration to th rules is to be given by either side.

CARDIFF MASTER BUILDERS' ASSOCIATI

The quarterly meeting of members of the Ca Master Builders' Association was held at the sociation offices, 22, Castle Arcade, Chamb Cardiff, the President, Mr. W. T. Morgan, in chair.

The President reported the proceedings at quarterly and annual meetings of the South W Federation held at Neath on June 26th.

National Insurance Bill.—The Secretary letter received from the General Secretary, a discussion ensued on the provisions of the Bill pecially Clause 51, and it was resolved that grounds of objection to the Bill be communic to the member for the City of Cardiff, and tha be requested to strongly oppose the Bill w view of securing such amendments in comm as would remove these objectionable features.

Cardiff, South Wales, and Monmouthshire A tects' Association.—The Secretary read letter Mr. G. A. Birkenhead, hon. sec. of this soc dated June 26th, stating that the Council of Architects' Society, having considered the tend of the city authorities to place upon their pr staff the designing of public buildings (work viously given out to architects), requested to if our association would be willing to support in any action they might deem proper to

It was resolved that a reply be sent stating we are in hearty sympathy with them in the ciples for which they are contending, and if they proposed taking action they would know what course they intended to adopt, we be prepared to consider how far we could su them.—I. WATKINS, Secretary.

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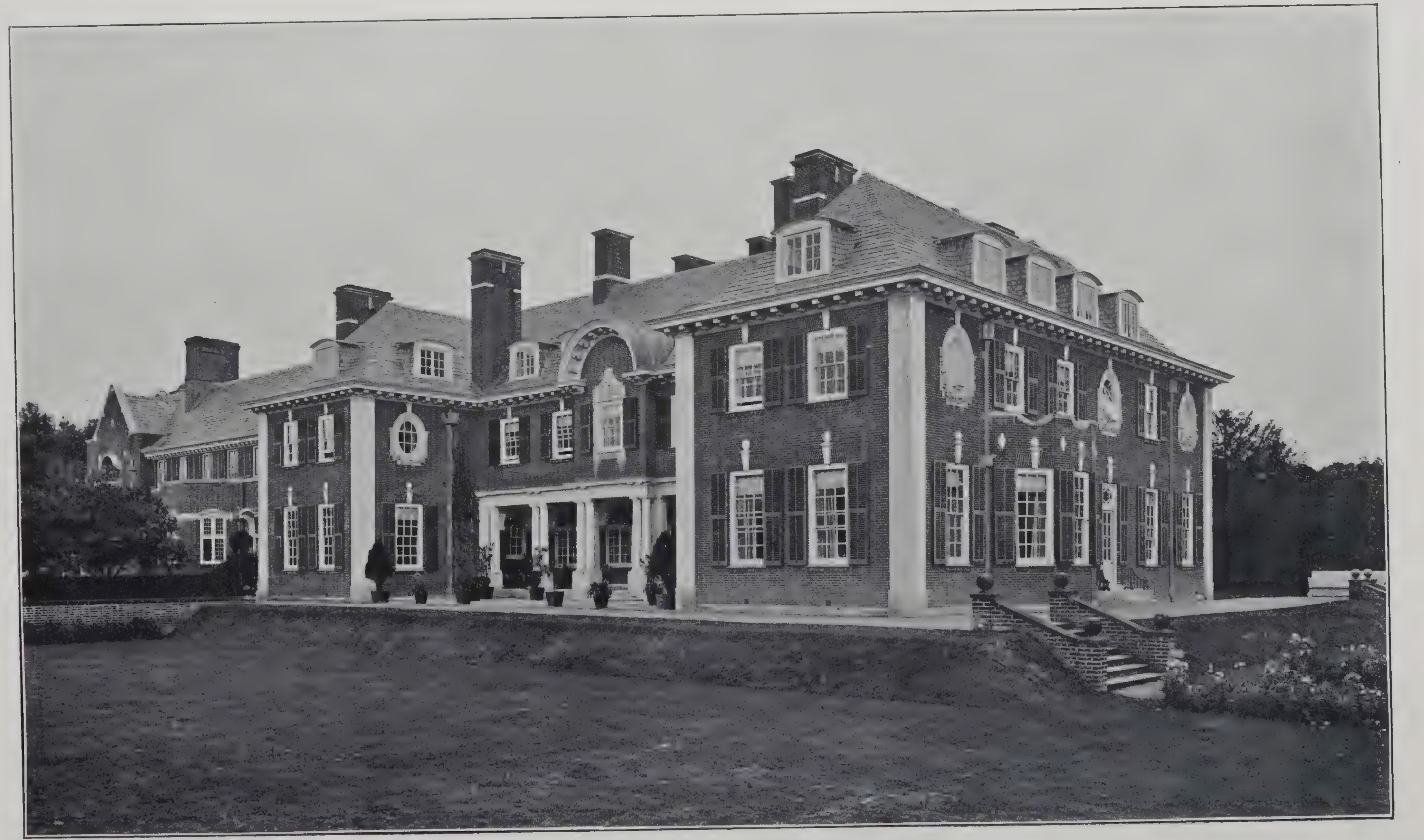
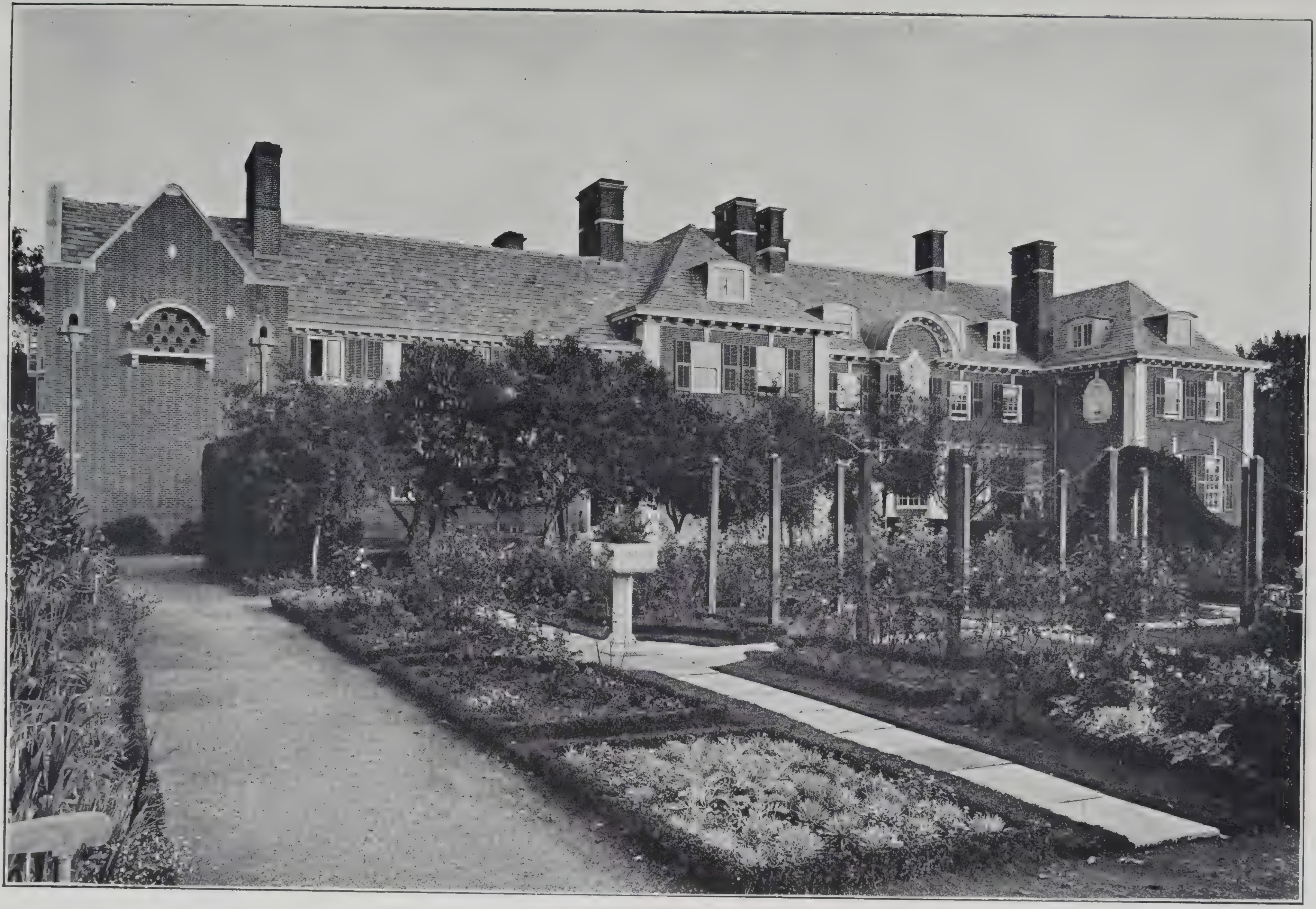
Supplement to The Architects' and Builders' Journal, *Wednesday, August 9th,* 1911.



GENERAL VIEW. FROM THE TENNIS LAWN.

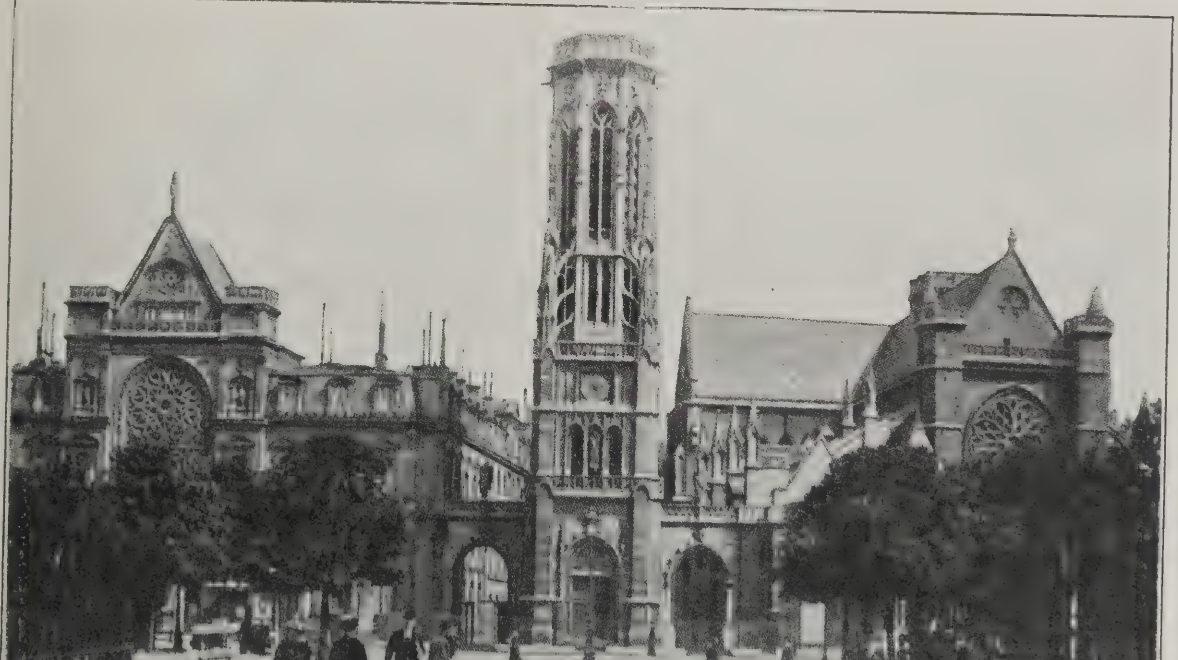


DITTON PLACE, BALCOMBE, SUSSEX: VIEW FROM DUTCH GARDEN. SMITH AND BREWER, ARCHITECTS.

THE ARCHITECTS' &
BUILDERS' JOURNAL.

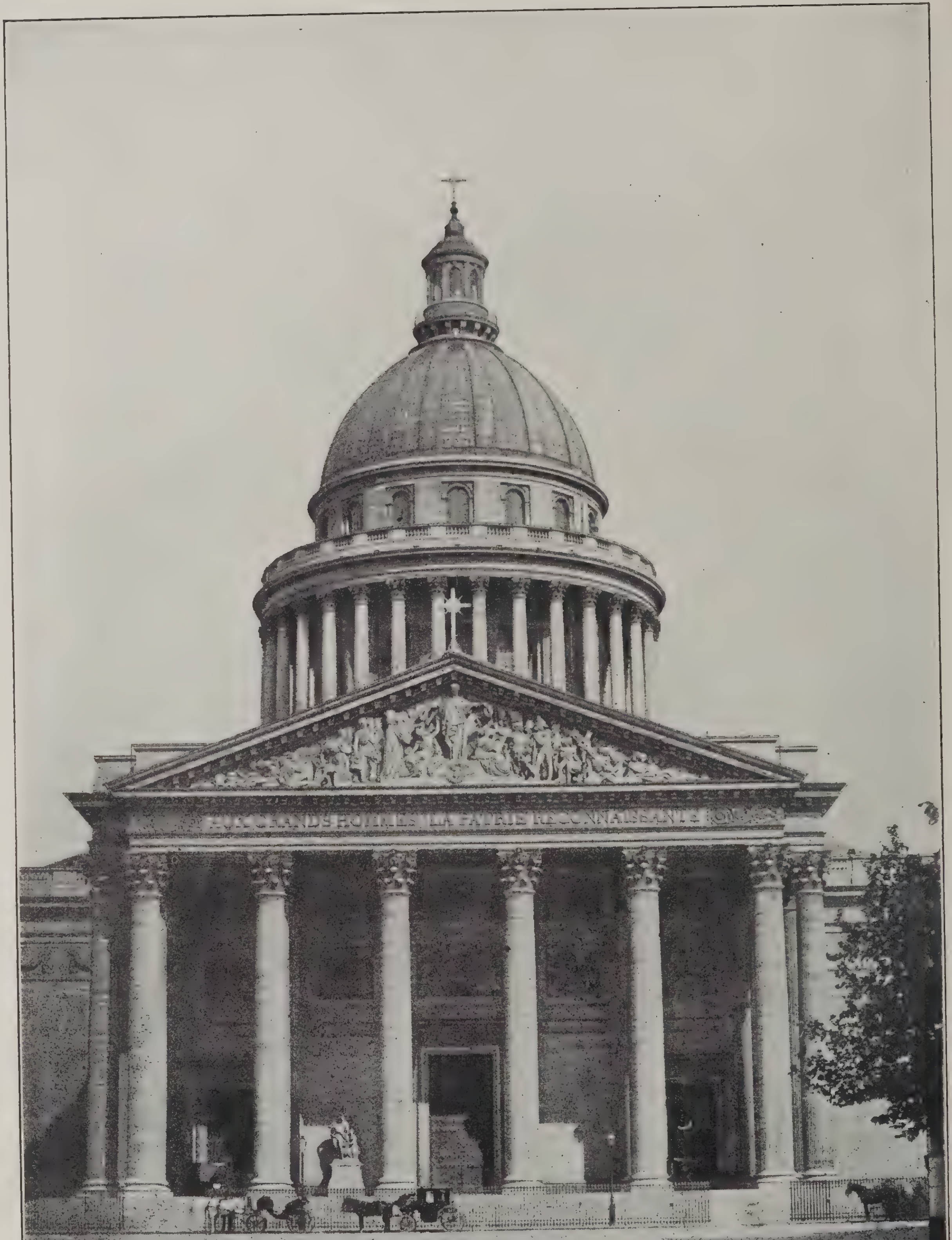
WEDNESDAY,
AUGUST 9th, 1911.

Volume XXXIV. No. 863



CHURCH OF SAINT-GERMAIN L'AUXERROIS, PARIS.

(See " Some Notable Buildings in Paris," page 140.)



Indubitably one of the most beautiful buildings in Paris, the Pantheon, originally intended for a church, was secularised in 1885, when the remains of Victor Hugo were interred there.

THE PANTHÉON, PARIS. SOUFFLOT, ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

AUGUST 9th, 1911. CAXTON HOUSE, WESTMINSTER. VOLUME 34. No. 863.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

Architectural Copyright in Parliament.

WE printed last week a full report of the discussion which took place in the House of Commons when the architectural provisions of the Copyright Bill were reached. That these provisions would meet with considerable opposition in the House we fully expected; indeed, we should not have been surrised if there had been a majority vote against them; as it vas, they only secured a majority of 12 out of a House of 96. The House of Commons, in the first place, cares very ittle about art unless an artistic question is somehow mixed up vith politics; and about architecture it cares least of all, ecause it is an English House of Commons, and architecture s the art least of all understood in England. The only instance ve can remember of a strong move being made in the House f Commons on an architectural question was when the late ir W. Harcourt endeavoured to get a vote against the adopion of Mr. Norman Shaw's design for Scotland Yard, on he ground that it was an ugly building; and the move was uite palpably an Opposition attack on a First Commissioner f Works appointed by the Government. In the case of the opyright Commission the political element does not seem to ave come into play much; attacks on the idea of copyrighting rchitectural design came indiscriminately from Conservative, iberal, Nationalist, and Labour members, all united in their islike to doing anything new for architects or architecture; ough it was a Conservative member, Sir F. Banbury, who escribed the proposal as "legislation run mad."

The defence of architectural copyright on the part of the olicitor-General, who spoke for the Government, was certainly ot very impassioned, and amounted mainly to contending at the principle had been adopted in other countries, that it uld do no harm, and that there was a certain class of cases which it might be beneficial to the public. His ideas on is head, however, as we shall see, are a good deal open to uestion. The one speaker who showed some enthusiasm in pport of the Bill was Mr. T. P. O'Connor, who surprised by a tone in regard to art unfortunately very unusual in the ouse of Commons; saying (only too truly) that "it had long en a reproach to us that we paid less respect to matters of t than did any other civilised country in the world." We e grateful to Mr. O'Connor for those words, at all events, d may be glad to find one member of Parliament who has e insight and the courage to see this and to say it plainly, ough there are other members from whom similar support ight have been expected and was not forthcoming. Where as Lord Balcarres, for instance, who probably knows more out art than any other member of the present Parliament?

The question of applying copyright law to architecture is doubt a difficult one, because architecture being in part a seful art," is bound up with practical considerations in a anner in which no other art is. There is also the point to considered, that during a great proportion of the history and development of architecture it was a national rather than a personal art, and details of the same character were at the same period so universally used and repeated, that we can approximately date a building by the style of its detail. In such details there was obviously no idea of copyright; they were the universal property of all who built. This is the idea which evidently underlies the letter with which Professor Pite fortified Mr. Joynson-Hicks in his opposition to the Bill. But Professor Pite would have made a stronger case if he had drawn his illustration from a period or periods earlier than the Renaissance. The Renaissance is, in fact, just the time when architecture first commenced to be an individual rather than a national art. It is hardly fair to say "that Bramante closely copied Alberti's originalities, that Raphael copied Bramante, followed by San Gallo, Peruzzi," etc. These individual architects were not so much copying one another as all copying more or less the same thing, viz., the Roman principles of architecture as they understood them; and after all, each of them treated the Roman principles in his own way, and Raphael copied Bramante only in the sense that he was set the task of proceeding with St. Peter's on the basis of Bramante's design. But even if we were to base the argument on the facts of Gothic architecture, when the same character of detail was, in the same generation, universally repeated, it would be going quite too far to say that even in that day there was no such individuality in architecture as might have been protected by copyright. Take the English cathedrals only; no two of them are alike in composition and in architectural effect; in their western façades more especially they every one show the conception of an individual mind; we have lost the names of the men, but the distinction of their ideas is patent to everyone. Take the most crucial instance, that of Peterborough, with a façade which is like nothing else in the world, which is a creation of individual architectural genius if ever there was one. Now suppose Peterborough were a modern cathedral, would it not be a perfectly flagrant action on the part of another cathedral establishment, because they admired it, to build a façade for their own cathedral exactly like it, without reference either to the architect or to the owners of the original building? Would not that be a proceeding which both could be and ought to be prevented by an architectural copyright enactment? And, in this supposed case, the application of such a preventive enactment would result in a benefit to architecture. The establishment that wished to have a façade to its cathedral equal to that of Peterborough would be under an obligation to apply to the original architect; they would say, in effect, "We admire that front of yours at Peterborough so much that we wish you would design us a similar one." And the architect would almost certainly reply (in effect) "I do not care merely to repeat myself; I see some ways in which I could improve on that design; I will produce you something of the same type, but if possible better." If the new establishment were to attempt to do this of themselves, or commission their own architect to do it, they would fall under the condemnation of adopting the first architect's main idea and infringing his copyright, perhaps spoiling his idea at the same time. Being under the legal necessity of applying to the original architect, they would be both doing him justice and at the same time giving him the opportunity to go a step further and to improve on his own work, which would be manifestly a benefit to architecture and not an injury to it. And a little reflection will show that this hypothetical case, which might easily have occurred if Peterborough had been a modern cathedral, is of very wide application.

Among the fallacies in the debate was Mr. Mackinder's assertion that what an architect did now was artistically to combine features already known. If he meant to say that the modern architect was in this respect in a different position from any of his predecessors, that can hardly be maintained. Reminding the reader again of the remarkable variety of our cathedral designs, what are they but different combinations of materials already known? Cathedrals, or parts of cathedrals, which are of the same date and where almost the same mouldings and other details are used, are nevertheless totally different in design. After the Renaissance, no doubt, architecture was in a different position from that of the architecture of the Middle Ages; it was recurring to antique details instead of inventing new ones; but there is plenty of variety of design in Renaissance buildings for all that. Wren's buildings are all made up of "features already known"; his superiority consists in the fact that he knew how to make them up with greater variety and interest of design than anyone else, and the results are distinctly his own. If Wren were a modern architect, would it be fair and just to allow any other architect of a church to erect a copy of St. Mary-le-Bow or St. Bride's steeple? Obviously not; a copyright enactment would apply absolutely to such a case, just as much as to that of a modern Peterborough.

Naturally, of course, since it is artistic design in architecture which is to be protected, we heard a good deal in the debate about the difficulty of deciding where artistic merit came in. That is a real difficulty, and the *Times*, in a very fair and well-reasoned leading article on the subject, made the rather ominous suggestion that judges in a court of law were likely to be possessed by "the common notion that architecture is artistic only in its ornament." There may be one or two judges on the Bench who know better than that, though in a general way we fear that the prophecy is only too true; though in fact a building may have great and original artistic quality without having any ornament at all. But both judges and juries will be bound to give some weight to expert evidence—to its conclusion at all events, even if they fail to understand its grounds. And it is not likely that any attempt would be made to put copyright law in action in regard to architectural design unless there were an unmistakable and flagrant case to go upon. It is probable that the effect of the Bill, if it becomes law, will be not so much to lead to legal action as to make unconscientious architects careful not to do anything to render themselves liable to it.

The Solicitor-General and another speaker in the debate seemed to have an idea that it was right to support the Bill, among other reasons, because architects would under it have a right to a royalty on every repetition, for instance, of a house design. They are rather under a mistake if they think that is what the architects want. It is not nearly so much a question with them of money as of artistic justice. A good architect does not want to repeat his own houses in a categorical imitation (unless in a terrace which is practically one design); still less does he wish to see his house imitated by speculating builders, with the disadvantages of having all the detail spoiled in the process.

The assertion made in the House that there was no evidence of any complaint from architects on the subject of architectural imitation is an entire mistake. We have known of several cases. There was one of a selected design in competition for a building, published in an architectural journal, which
brought a letter from another architect complaining that t
was nothing but a copy of a design of his own which had be
published two or three years before. He was perfectly corre
the two designs were identical. That is not a thing that ou
to occur, or for which the original designer ought to have
remedy. We knew another case where a gentleman w
admired a house which had been built from an architec
design coolly instructed a contractor to build him one like
Ought that to be possible? In the Academy and other exhi
tions designs or models are often shown which are practica
copies of famous old buildings; and though Robert Adam (
instance) has been dead some 120 years or so, it is hardly f
to his memory to deprive him of the credit of his idea, e
by an oversight. But the point of the reference is that
imitation of this kind might equally be made of a mansion
a modern architect, and under existing law he would have
remedy whatever. The proposed Copyright in architect
would give him the remedy.

Old Houses at Westminster.

LADY SCOTT and others write as follows in
"Spectator":—"May we ask for your powerful
in a crusade that some of us who are citizens of We
minster are carrying on in defence of the old streets that s
remain—the last traces of the old Westminster of 200 ye
ago? One after another of the old buildings are bei
destroyed, buildings that are not only interesting from th
historical and literary associations, but are also in such co
plete harmony with our great national possessions, Westmins
Abbey and the Houses of Parliament. Some time ago Abi
don Street was in danger. If the threat had been carried
those buildings facing the Houses of Parliament, wh
harmonize perfectly with them both in size and charact
would have been destroyed. The houses now threatened
in Cowley Street, which lies behind Dean's Yard, in cl
proximity to Westminster Abbey. A large house is need
but two of these old houses could without difficulty be thro
into one. Nos. 2 and 3, Cowley Street were altered in t
way some years ago. A large drawing-room was obtain
but the little 'Powder-room' leading out of it remains
perfect as when the fine ladies of the eighteenth century h
their hair powdered there. These old houses have a high va
in the eyes of people who appreciate their homely beauty a
the link they give us with the past. The fact that reside
living in these old streets frequently receive applications fr
house agents specially asking for the 'old houses' proves t
they also have a distinct commercial value. North Stre
which adjoins Cowley Street, was also threatened a few ye
ago, but, happily, people came forward eager to secure
pretty old houses, and to the relief of the lovers of W
minster the houses were relet on lease. Smith Square,
which North Street leads up so finely, still retains on one s
houses built in the eighteenth century. There are in W
minster four or five new buildings constructed in the ea
Georgian style, and if the new houses wanted in Smith Squ
were to be built in the same style the whole Square might
beautiful, and the houses, though new, would not offend
eye. So much of London has been already irretrieva
injured. Surely we may hope that the parts of old Westmin
that still remain may be preserved for the generations to com
The list of signatures of those supporting Lady Scott in
appeal is too long to print in full. It is, however, most influ
tial, and includes the names of Canon Duckworth, Archdea
Wilberforce, Sir Frederick Bridge, Dr. Gow, Mr. Troutbe
Mr. Alfred Lyttelton, Canon Beeching, and Mr. Mau
Baring. We cordially agree with the editor of the "Spectat
that if those who are moving in the matter save the old hou
of Westminster, they will deserve the gratitude, not only
their immediate neighbours, but of all Londoners.

The Penn Memorial in All Hallows Barking.

HE church of All Hallows Barking, in which has been placed the memorial tablet erected by Pennsylvanians to the memory of William Penn, who was baptized in church, has a very interesting history. It derives the ond part of its name from the fact that it was connected h Bishop Erkenwald's convent at Barking. Less confusion to where it may be found would have resulted if its old ne of Berkyngechurch-by-the-Tower had not been clumsy to survive. It is nearly opposite Mark Lane ilway Station. The Norman Conquest first brought the irch—which must previously have been subjected to many issitudes from Danish and other marauders—into the field real history. It was then, perhaps in 1087, that a church the Norman style took the place of the previous Saxon ldings, and the pillars of its nave are still standing. hard I. added a chantry chapel, and his heart was buried der the high altar. John Tiptoft, created Earl of Worcester Henry VI., and famous as a friend and patron of Caxton printer, greatly enriched the chancel, and it is sad to rn that he was beheaded on Tower Hill.

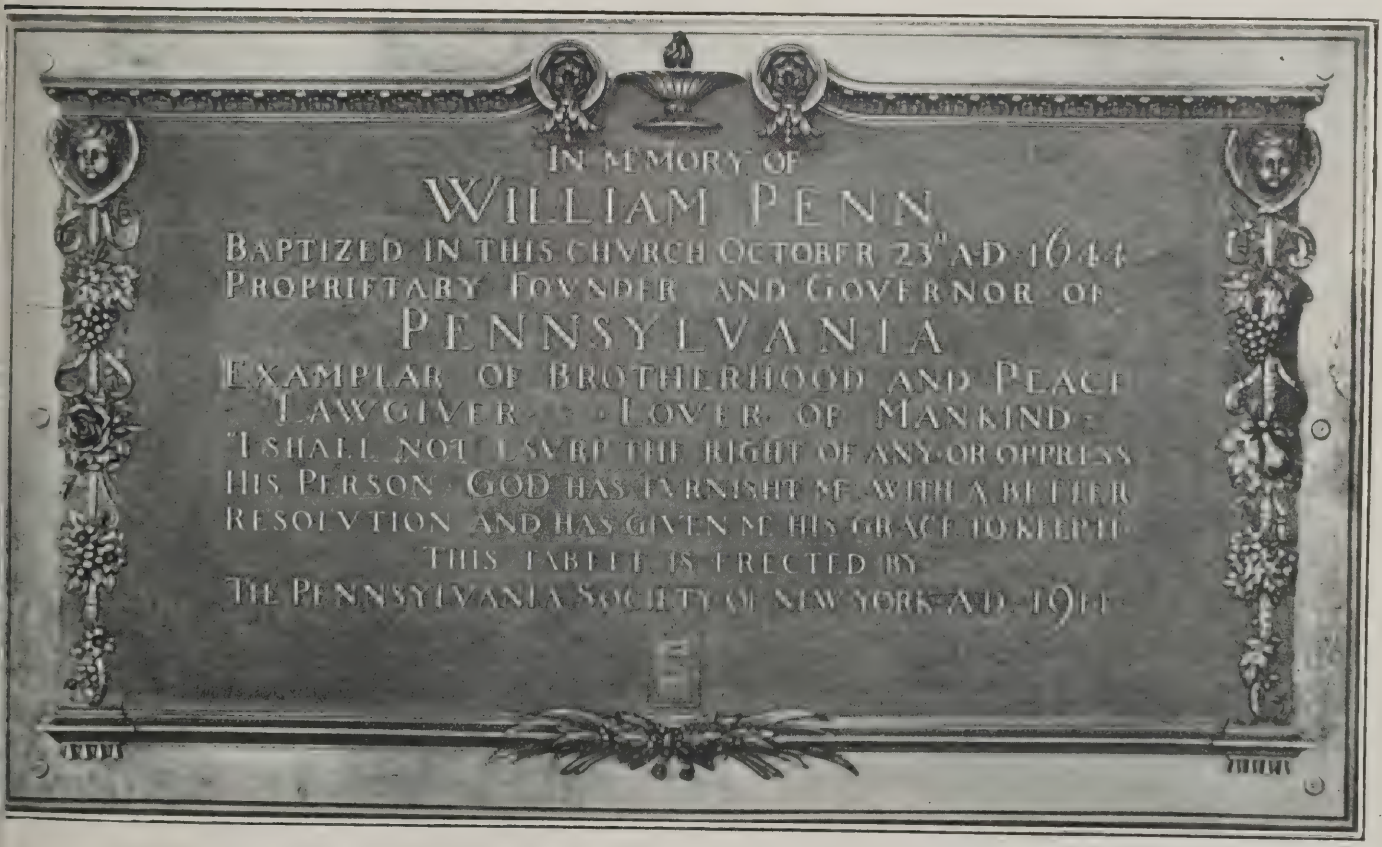
Richard III. rebuilt the chantry. The vicarage having been nded in 1387, it is probable that some work was done on fabric at about that time, and the east wall of the chancel, h its rough undressed flints on the exterior, and the east ndow, apparently belong to this period.

At the end of the fifteenth century the church was remodelled Tudor lines, all but the nave of the Norman building being en down. On the pillars south of the chancel, the removal successive coats of whitewash reveals that the interior was hly decorated and coloured. On the floor is to be seen the -mark" made by the masons to indicate the position of the ll foundations when, in 1701, they laid down the present or of Purbeck marble.

Further restoration took place in 1616, when the clerestory and aisle windows were renewed, and a new roof was put on. It was probably at this time that the old Norman pillars and arches were brought to their present shape, the nave was painted and gilded, and the aisles were paved. A curious point is that the arches on the north side have only one moulding, while those on the south side have two mouldings. To this period also belongs the beautiful Sussex ironwork of the pulpit rail and of the hat peg behind the pulpit. The sounding board was put up in 1638. In 1649 there was an explosion of gunpowder in Great Tower Street, which inflicted such injuries on the church tower that it had to be taken down. The tower which was erected ten years afterwards was placed not on the site of the old tower, but at the west end of the nave, and it was built not of stone but of brick, and without a steeple. "It is interesting," says Dr. Biggs, the historian of the church, "as being one of the few bits of church architecture designed during the Commonwealth." In the great fire, the vicar's house was destroyed, but the church escaped with but slight injury, only the porch being burnt down. The whitewood carvings on the font-cover and on the reredos are ascribed to Grinling Gibbons.

In 1814, £5,313 was spent on a disastrous restoration, in which the 300-year-old ceiling of oak and chestnut, curiously arranged and moulded, gave place to "a tasteless affair of fir and stucco." At the same time the height of the walls was considerably reduced, and the whole exterior suffered in character by losing the battlements, which were restored in the 'eighties by the late Mr. Pearson, under whose supervision the walls of the north aisle and clerestory were thoroughly restored, and the unsightly flat ceiling gave place to the fine open oak roof.

In 1645, when sectarian bitterness ran riot, the new font in which the infant son of Sir William Penn had been baptised was turned out of the church, the altar was broken down, and part of the present choir vestry was used as an engine-house.


IN MEMORY OF
WILLIAM PENN
BAPTIZED IN THIS CHVRCH OCTOBER 23D AD 1644
PROPRIETARY FOVNDER AND GOVERNOR OF
PENNSYLVANIA
EXAMPLAR OF BROTHERHOOD AND PEACE
LAWGIVER · LOVER OF MANKIND
"I SHALL NOT VSVRP THE RIGHT OF ANY OR OPPRESS
HIS PERSON GOD HAS FVRNISHT ME WITH A BETTER
RESOLVTION AND HAS GIVEN ME HIS GRACE TO KEEP IT"
THIS TABLET IS ERECTED BY
THE PENNSYLVANIA SOCIETY OF NEW YORK AD 1911

THE PENN MEMORIAL, ALL HALLOWS BARKING. McKIM, MEADE, AND WHITE, ARCHITECTS.

The National Art Schools Competition.

WE prefer to give the above title to the annual exhibition of students' work from the art-schools of the kingdom, on view as usual in some galleries off Exhibition Road. The phrase "National Competition" or "National Art Competition" (which has been sometimes used), looms a great deal too large in the ears of the stranger within the gates, the competition being really between the pupils or students of the various art-schools in the kingdom which are under Government control. The exhibition is always interesting, and contains a good deal of good work; but "National Competition" *sans phrase* suggests a good deal more than this.

The work exhibited seems quite up to the usual mark. Among such an immense number of models and drawings it is impossible to single out many for special notice; but in the first room we may especially notice the model of a monument with a recumbent effigy, by Mr. A. Stiles (Westminster Technical Institute), which is good not only in the general sculptural composition, but also (a more rare merit) in the broad and effective design of the architectural portion of the work. This received a silver medal. The figure studies in drawing and modelling show a very good level of work; among the modelled designs is a bas-relief of two nude figures, for an overmantel panel, by Mr. W. H. Wright (Nottingham), which fully merits the gold medal awarded to it. Among the modelled designs for decorative work are some good wall diapers in plaster relief; one by Mr. W. Strutt (Burnley) for alternating relief designs in squares, tile-fashion, deserves notice; also the designs in plaster relief for metal hinges by Mr. Kenneth Perry (Aston Manor), and that for a letter-box flanked by winged Cupids (a love-letter box?) by Miss Margaret Clarke (Nottingham). The work in Still Life painting is not very successful, satisfactory Still Life painting being, in fact, one of the most difficult of accomplishments, and one in which the results are mostly not worth the trouble they cost, except as a means of training, for which it is invaluable. Silver medals have been awarded to two Still Life paintings of the same subject—a plaster statuette, a green textile hanging, and a circular mirror, the whole forming a decorative composition; but the two paintings are not very satisfactory either as to texture or colour, the latter especially.

Among the black-and-white drawings is an excellent piece of pen drawing of "Ipswich and Docks," by Mr. Leonard Squirrel (Ipswich), to which a silver medal has been awarded. One of the original and professed objects of the National Art Department was to improve the art manufactures of the country by training people in decorative design for applied art, and there is no doubt that in this respect the Department has been of the greatest benefit to our Industrial Art. Hence we naturally see a good deal of space taken up in the exhibition by designs for objects of manufacture, textiles, wall-papers, etc. Many of these are both good and original. A design for printed silk—conventional foliage and fruit—by Miss Fildes (Morecambe) is charming; also those for printed muslin by Miss Margaret Johnson and Mr. Firoz-ud-din (both of Battersea Polytechnic).

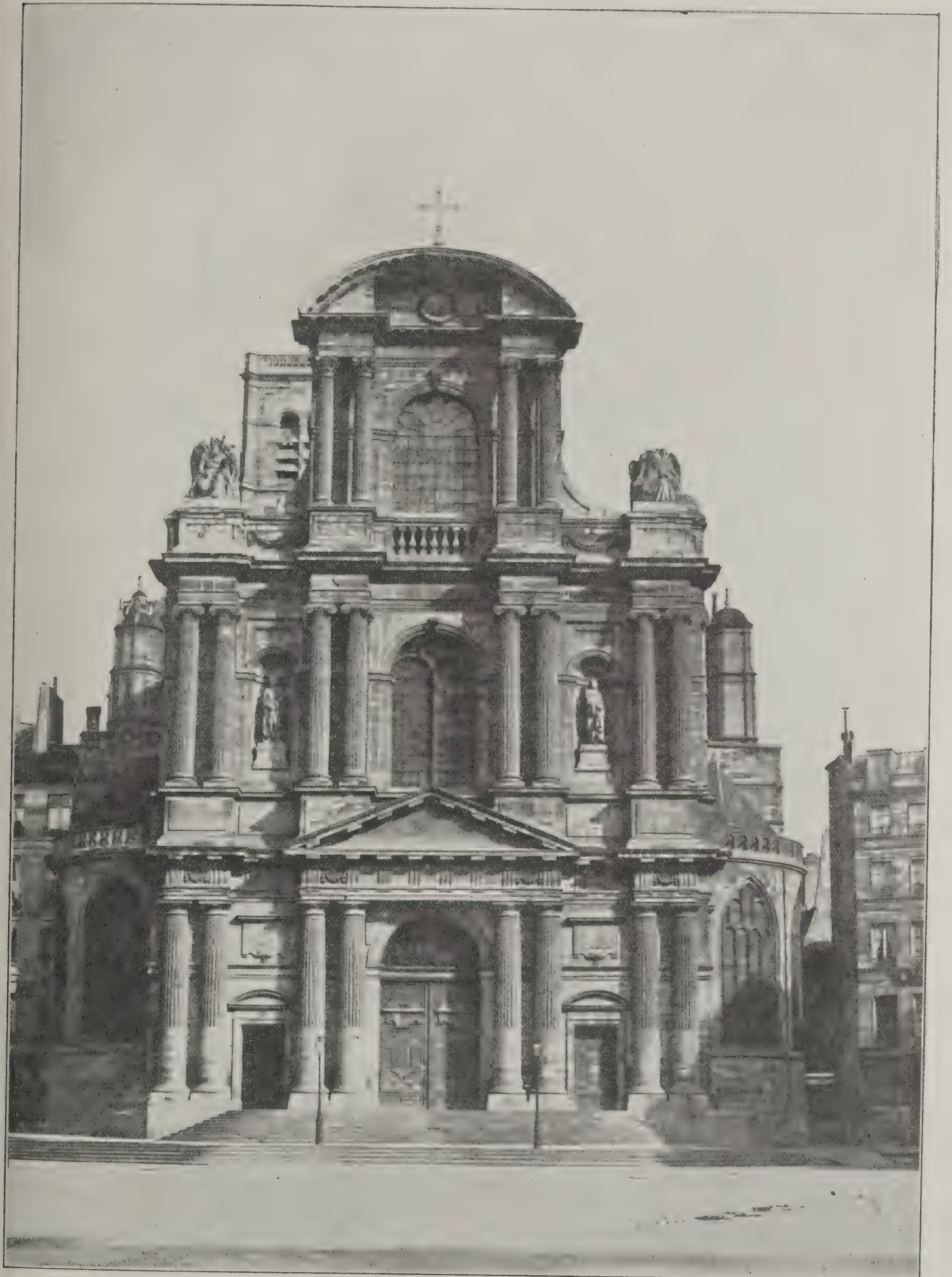
One point in which the Royal Academy might take an example from South Kensington is that opportunity is given for showing stained glass design in the actual glass, in small window-openings provided for the purpose; the only effective manner in which stained glass can be shown in an exhibition. The examples are necessarily small in size, and on the whole not very good in colour or in what may be called stained-glass style; by far the best is the panel with a head in the centre, by Miss Helen Miller (Beckenham), marked as "designed and entirely executed" by the artist, which one likes to hear of about stained glass. The gold medal given for a design of St. Brandan and Judas (by a Dublin student) is a mistake; it is a somewhat effective *picture*, but it has not the quality proper to stained glass design. Moreover, the author has misre
the legend which he illustrates; "the traitor Judas" se
by St. Brandan on the iceberg was not surrounded by t
flames of hell; the very point of the story is that, for one ki
deed done on earth, he was allowed for one hour every ye
to quit the flames and cool himself on an iceberg; so the desi
is wrong every way.

The architectural department is the weakest, as it alwa
has been; youths who mean seriously to study architecture
not go to National Art Schools for it. There is a certa
amount of good measured drawing of celebrated buildings, b
little of original design, and that little mostly very weak; t
plans of country houses are even more naïve than the desig
The best thing is a design for a Public Place by Mr. W.
Ross (St. Marylebone Polytechnic); and Mr. Maltby (Leic
ter) shows a creditable study for a reinforced concrete wa
house.

The Late Mr. Abbey.

THE death of Mr. Edwin A. Abbey, at the comparative
early age of 59, is a great loss to English art; we m
put it that way in the case of a painter who, thou
American by birth, may be said to have become entire
English both in his life and in his painting. His artis
history is rather a curious one, for he appears to have co
menced his career, after very slight education in art, as
black-and-white draughtsman on the staff of *Harper's Mag*
zine, to which up to a recent period he still continued to co
tribute, chiefly in the shape of pen sketches of characters
Shakespeare's plays, usually to accompany a literary arti
on the play illustrated. These, though they were always a
mirable examples of pen drawing, were mostly by no mea
good conceptions of characters intended to be pourtrayed, a
would be repudiated as such by most Shakespeare students "
sight"; and it is rather surprising that an artist who show
so little ability at Shakespeare illustration in black and wh
should have achieved such remarkable success in the same ki
of subject, as he undoubtedly did, in oil painting. Mr. Abb
was never fully himself except in oil-painting on a rather lar
scale. What he could do in this way he first showed triu
phantly in his remarkable picture of "The Duke of Glouces
and Lady Anne," which took the public by storm at t
Royal Academy exhibition, and was almost a new indicati
of how historical painting might be combined with a rea
quite dramatic realism. Some of his other Shakespeare p
tures, "Lear and his daughters" especially, were very succe
ful, but the most remarkable of them was perhaps the co
paratively small picture in illustration of the lyric "O Mistr
Mine," in which he invented a woman's face of a haunti
quality of expression such as has seldom been seen on canv
For the Boston Library in America he executed a large a
fine series of illustrations of the "The Holy Grail," rat
too modern in feeling for the subject; the figure of Sir Galah
rather suggested a broad-church curate. His greatest s
cesses were perhaps in the large series of decorative painti
for his native town, Philadelphia, in which he showed
remarkable talent for treating historical and industrial subje
in a manner at once poetic in suggestion and decorative
effect. A summarised account of Mr. Abbey's artistic car
will be found in the obituary notice given in another part of
present issue.

The estimate of his work there given is mainly that o
writer in the *Times*, and it will be seen that the present wri
is not wholly in agreement with it. There can be no questi
however, that in Edwin Austen Abbey we have lost an ar
of great and rare gifts, and we share to the full the regret t
he has not lived to complete the great work upon which he
engaged at the time of his death. It may even be suppo
that, in spite of his nearly sixty years of age, he had not
reached—and certainly he had not passed—the full matu
of his powers.



CHURCH OF SAINT-GERVAIS, PARIS.

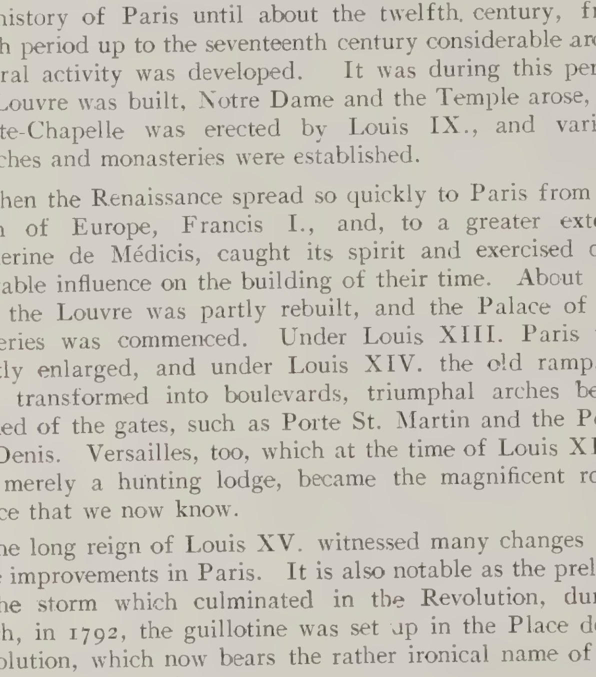
SOME NOTABLE BUILDINGS IN PARIS.

PARIS, in spite of its detractors—who of recent years have been many—remains architecturally almost the most interesting of the Continental cities. That is the general verdict of the shoals of foreign architects who at this season are spending a portion at least of their holidays there. A very few of the many buildings of which the writer took special note on a recent visit are here illustrated. These, with a very brief outline of the architectural history of the city, may serve "a double debt to pay," as reminder of enjoyment already realised, or a foretaste of what is in prospect.

From the architectural aspect, there is little of interest in the history of Paris until about the twelfth century, from which period up to the seventeenth century considerable architectural activity was developed. It was during this period the Louvre was built, Notre Dame and the Temple arose, the Sainte-Chapelle was erected by Louis IX., and various churches and monasteries were established.

When the Renaissance spread so quickly to Paris from the south of Europe, Francis I., and, to a greater extent, Catherine de Médicis, caught its spirit and exercised considerable influence on the building of their time. About this time the Louvre was partly rebuilt, and the Palace of the Tuileries was commenced. Under Louis XIII. Paris was greatly enlarged, and under Louis XIV. the old ramparts were transformed into boulevards, triumphal arches being formed of the gates, such as Porte St. Martin and the Porte St. Denis. Versailles, too, which at the time of Louis XIII. was merely a hunting lodge, became the magnificent royal palace that we now know.

The long reign of Louis XV. witnessed many changes and some improvements in Paris. It is also notable as the prelude to the storm which culminated in the Revolution, during which, in 1792, the guillotine was set up in the Place de la Révolution, which now bears the rather ironical name of the Place de la Concorde.

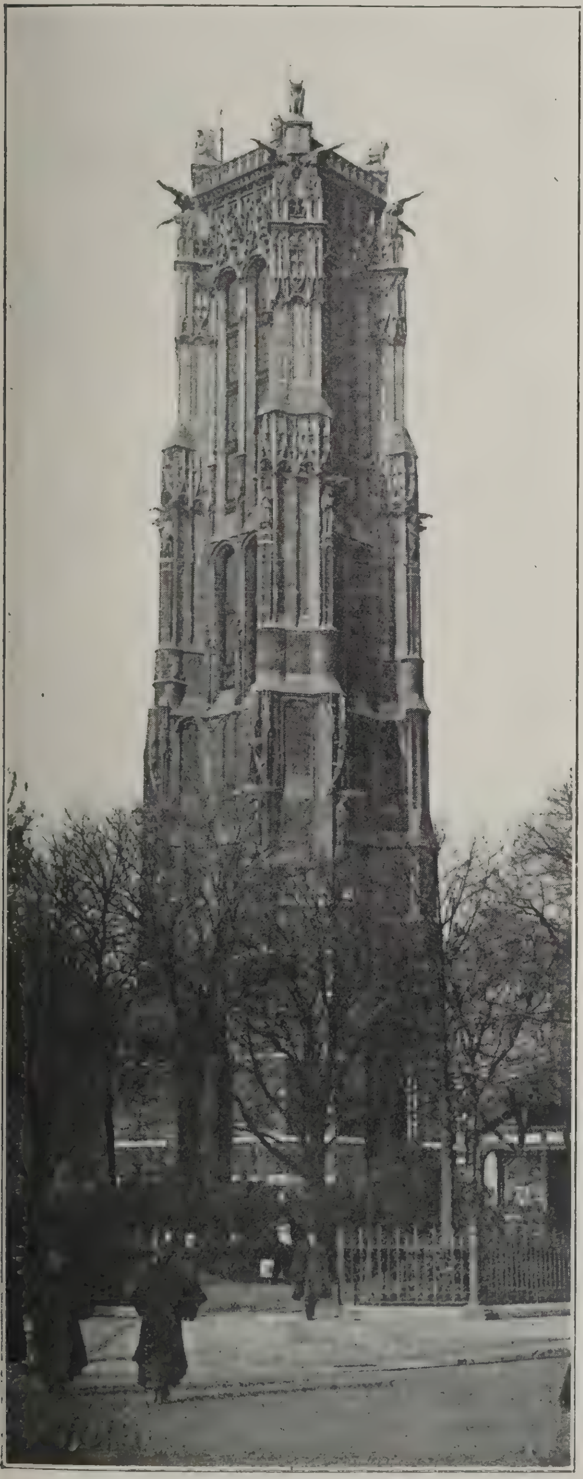

LA SAINTE-CHAPELLE.

SAINT GERMAIN-DES-PRÈS.

Under Bonaparte a new vista opened for architecture Among the many works which were erected during the Firs Empire, it may be recalled, were the Arc de Triomphe, th Vendôme Column, and the bridges of Austerlitz and Jena This period also saw the partial completion of the Church c the Madeleine, and of the Bourse.

Under Louis XVIII. and Charles X. were erected th Church of St. Vincent de Paul and the Chapelle Expiatoire this latter serving to expiate the misdeeds of Louis XVI. an Marie Antoinette. The time of the Second Empire (185 1870) is chiefly remarkable for the replanning of the city b Baron Haussmann, Prefect of the Seine, who expended no le a sum than twelve millions sterling in reconstruction and in provement. The fall of the Second Empire was coincider with the Franco-German War of 1870, during and after whic Paris architecture suffered unspeakable indignities, first b bombardment and afterwards at the hands of the Con munards, whose destruction of public buildings and mon ments included the Hôtel de Ville, the Tuileries, and th Vendôme Column. Under the Third Republic many improv ments that had been commenced during the Second Empi were finished, including, for instance, the Opera House i 1875, and the Avenue de l'Opéra. The visitor from our ow rather featureless capital is at once struck by the marke distinction between the fashionable quarter and the scholast and industrial quarter—the former beginning approximate at the Louvre and extending west to the Bois de Boulogne ar Neuilly, and north to the Parc de Monceaux, the Gare Sain Lazare, and the Opéra; and the latter—far the larger portic —being chiefly on the south side of the river, which includ the unique "Quartier Latin," where one finds at every turnir an Ecole, a Lycée, or one of the Ecoles Speciales in connecti with the University of Paris. Here, too, are the Sorbonr the Collége de France, the Ecole Polytechnique, the Ec des Arts-Décoratifs, and, above all, the Ecole des Beaux-Ar whose genius and life-history were so interestingly set for in this journal a few weeks ago. Americans worship here

a shrine, for is it not the well-spring of all that is best in
eir own school of architecture? Soufflot's Panthéon, also
this quarter, was erected in 1764 as a church, but very
ortly afterwards assumed the character of a national Val-
lla. The interior doubtless contains some of the best
orative paintings in Paris, including some fine things by
vis de Chavannes, Blanc, and Humbert. The Library of
inte Geneviève, which stands opposite the Panthéon, was
dently intended to be an accessory to it; it is certainly a
st successful example of courteous if not reverent subordina-
n, the treatment both in composition and detail being
ightfully simple and unassertive. The Hôtel de Cluny
esteemed of many as one of the most interesting of the older
ildings in Paris. Erected originally as a dwelling or inn
the abbots of Cluny on their visits to Paris, the building
erwards became a royal residence, and now serves as a
seum. It is a well-preserved specimen of late French
thic with Transitional detail. The collection which it



THE TOWER OF SAINT-JACQUES.

houses is of unusual interest. Here one may observe a chest upon which some great sculptor has lavished years of his life; or there a mirror-frame which would defy reproduction by the most skilful hands in Paris in a shorter time than two years. Between the Hôtel de Cluny and the Boulevard Saint-Michel may be seen the interesting remains of the Thermes of Constantius Chlorus, whose palace and baths formerly occupied the site of the present museum.

The Tour Saint-Jacques, which rises to a height of about 175 ft., is all that remains of Saint-Jacques de la Boucherie, which was demolished in 1789. It has, of course, been restored, and consequently looks rather newer than might have been expected; but, after the towers of the cathedral, it is the finest in its style in Paris.

In the Rue du Louvre is the beautiful church of Sainte-Germain l'Auxerrois. Dating from the twelfth century, the church has been several times restored, and historically it is chiefly notable for the fact that from its tower, which faces the Louvre, the signal was given on St. Bartholomew's Day, 1572, for the massacre of the Huguenots. The church is perhaps somewhat belittled by Perrault's fine colonnade to the Louvre, which it immediately faces. Saint-Germain-des-Près, of which a small view is shown, is the oldest church in Paris, and therefore rather a hackneyed subject for depiction. The church of Saint-Gervais, behind the Hôtel de Ville, dates from 1616; and although the exterior portico is rather a fine composition, the interior does not fulfil the expectations which have been thus aroused. There is, indeed, little of interest inside except statuary and pictures of average merit.

La Sainte-Chapelle, which is but a short distance from Notre Dame, is commonly—and perhaps not altogether improperly—regarded as the most elegant ecclesiastical building in Paris. Erected in the thirteenth century by Pierre de Montereau by command of Louis IX., the church was completed in three years. It has had three spires, the present one having been completed in 1824 by Viollet-le-Duc.

The Musée Carnavalet is generally considered to be one of the most charming buildings in all Paris. It may be recalled that for several years it served as the residence of Madame de Sévigné, and that upon its design were engaged first Pierre Lescot and Jean Bullant, with the sculptor Jean Goujon, then Du Cerceau, and finally François Mansart, who added most of the façade to Rue de Sévigné.

The buildings in Paris, of course, gain enormously by the care that is taken in providing approaches that exhibit them to the best possible advantage. One has only to recollect, for instance, the Chamber of Deputies, the Opera House, and similar buildings, to realise how much their effect depends upon their spacious surroundings.

While in most Continental capitals there are numerous recent examples of a styleless riot of architectural fancy, Paris, on the whole, has remained true to scholarly traditions. And yet there are glaring examples to the contrary. The reconstructed "Moulin Rouge" is an example of riotous exuberance, but far more insidious has been the admission of a florid lavishness in the carved enrichments of doorways, balconies, and other features of many of the newer buildings. We see ornament in redundance; capitals woven on to the entablature with carved leaves and tendrils; corbels melting into the wall surface with a false sense of plasticity; stonework, in fact, losing its true character through decoration which has no respect for classical design. In most cases the architectural scheme, in its main lines, may still show the controlling influence of the Ecole des Beaux-Arts; but not infrequently the designer has allowed his better sense (if in politeness he may be assumed to have any) to be dominated by an ill-regulated desire for "freedom" in detail. But the impression that one brings away from Paris is hardly tinged by any reminiscences of vagary and eccentricity. Rather one feels that the occasional discordant note does but emphasize the beautiful serene harmony that here more than anywhere else prevails, in a city whose architectural charm is perennial and inexhaustible.

BOOKS

The Ground Plan of the English Parish Church. By A. Hamilton Thompson, M.A., F.S.A. Cambridge University Press, 1911.

This is an excellent little book, which we hope will be largely read by those who are interested in our ancient parish churches, and which may create a new interest in their history among those who have it not at present. The object is not to trace the changes in architectural details—buttresses, window-tracery, and so on; these the reader is assumed to have a general knowledge of; the object is to concentrate attention on the plan of the church, and its gradual evolution.

One of the main points dealt with is the suggestion that, for a time at least, and in certain cases, the central space type of church plan, what may be called the Byzantine, or the Eastern type, had more influence than is commonly suspected. There are two great types of Christian church plan, that just referred to, with a wide central space, and that which may be called the Latin plan, based on or suggested by the Roman basilica; the long plan, either with or without aisles, with a chancel at the end, to which the plan leads up. The degree in which the Pagan basilica influenced the plan (and, we may add, the section) of the early Latin churches, is very well discussed in the opening pages of the book, in a manner which we think exactly hits the truth. In the earliest extant churches of England the author recognises three types, or rather variations, of the long plan. There is the actual basilican plan, the long plan with aisles, found in the remains of the Romano-British church at Silchester, but otherwise very rare in the early centuries; there is the long aisle-less nave with an apsidal chancel open to the nave; and the long aisle-less nave with a square chancel, as at Escomb, in which instance the chancel arch is a doorway rather than an arch, occupying only the central portion of a screen-wall. So far, the long plan without aisles seems to have been in the ascendant, a fact which, as the author says, may be easily accounted for because it was less difficult to construct than the plan with aisles; and the same influence led to the preference of the square-lined chancel, easier to construct, by primitive builders, than the semi-circular apse. Thus this desire to evade the difficulty of the circular wall, in the earliest British churches, led to the square-lined chancel being stamped as the characteristic English form, and thereby influencing English church architecture to the close of the mediæval period. With the invasion of the Normans and their builders the Norman apse prevailed for a time; but as soon as, in process of time, the country had become, as one may say, de-Normanised, the builders of the later and larger English churches went back to the Saxon tradition of the square east end.

So far everything is on the lines of the long or basilica type of plan. But the author thinks that we find the influence of the central type of plan in some of the later Saxon churches, such as Barton-on-Humber, where the tower is unusually wide, the entrance doors are formed in it, and the small building of the same date westward of it, and narrower than the tower, is not so much a nave as an extension westward of the central space. In other words, the large square central space under the tower was the nave. The idea throws a new light on the subject, and on the function of these large towers of the later Saxon churches; and the author cites the description of the church built by Wilfrid at Hexham, which shows that in this case the plan was a Greek cross, that the central space was the actual church, and that the centre part of the building was "tower-like" in form. So that there really seems to have been something like a chance that the central type of church plan might have become the normal English form, though the Normans, of course, would have pushed it aside for a time. That the central type did not prevail the author attributes to the fact that the Saxon builders dealt only in straight-lined plans. "Our church plan develops as the result of an effort to combine a series of rectangles effectively; and, while this combination can be attempted in several different ways, it is obvious that the rigid lines of the rectangle do not admit of that free scope in centralised planning which is given by the circle and the polygon."

The construction of a central tower on piers connected by wide arches was beyond the skill of the Saxon builders, hence his centre tower, where built, formed the widest portion of an aisle-less church, such as local builders could carry out. This might be diversified by the addition of transepts, though the author puts it rather oddly (from an architect's point of view) in saying that "to the cruciform plan the central tower built on piers and arches is essential."

THE CLUNY MUSEUM, PARIS.

should put it exactly the other way— the central tower built on piers and hes the cruciform plan is essential;” to vide abutment. That perhaps did not ur to the author.

aking the aisle-less church as the start- point for English church building, the ition of an aisle or aisles to such a rch was obviously in the first instance the desire of getting more space. The hor gives an interesting imaginary ac- nt of the process of adding aisles to an sting aisle-less church, building in the s gradually into breaks made in the sting walls. The old walls of the nave, ve the piers and arches thus built in, e, he thinks, left untouched. “In this the upper parts of the walls of several on naves—more, probably, than we e opportunity of discovering—remain is”, a hint to be borne in mind by those are examining ancient churches ch seem to present incongruous details. onnection with the subject of the addi- of aisles it is to be remembered that reason for adding an aisle, in addition he desire for space, may have been to vide a dignified position for a special r and chapel, at the east end of the e.

he author does not assign any special on for the frequency of the west end tion of the tower in English churches. eems probable that in most instances mportant west end tower was part of a eral rebuilding or enlarging scheme; wanted a larger and more striking er, perhaps carrying a spire; they could build it on the crossing piers without rging them to an inconvenient extent, hey built their improved tower at the end, where they could found it solidly. agree with the author in considering the western tower, which is planted le the nave, i.e., occupying what would he first bay of the arcade, is much less tive than that which stands out and is down to the ground line.

me more plans in the book would increased its value: there are a few, not enough to illustrate all that is . Probably, however, this was simply estion of expense, as the object evi- ly was to produce a small and inexpen- book. Otherwise it is a most interest- and well written book on a fascinating ct.

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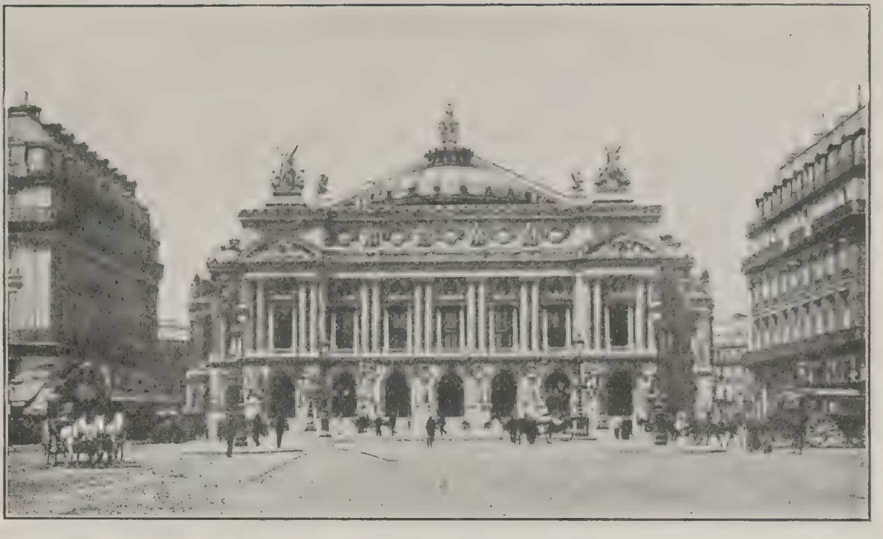
s on Irrigation Works. By N. F. ackenzie, M.Inst.C.E. London: Con- ble and Co., 1910. *7s. 6d.*

igation works form especially an neer's subject, not an architect's; yet vould not advise architects on that nt to overlook a small and inexpen- book containing a great deal of in- ation on the subject, based on long ical experience. An architect, especi- f he happen to be called upon to act kind of pioneer a new foreign dis- (which may happen to many a young tect in these days of overcrowded pro- ns at home), can never know when kind of special practical knowledge not come in usefully. And the sub- reated of in this book is in itself of derable interest.

e author was formerly Under-Secre- for Irrigation to the Government of , the land where irrigation is of pri- importance; and his experience has usly been much more than merely ad- trative. He goes fully into the pre- ary statistics necessary before decid- n the details of a scheme of irriga- and follows this up by descriptions of nstruction of different schemes car- out in India, the difficulties with the construction, and maintenance of weirs under various conditions of site and river bed, illustrated by explanatory sections of the construction of weirs and the treatment of the river bed above and below the weir. There is a chapter on the subject, which should be of special interest to English readers, of the development of irrigation in Egypt since 1884, and the works carried out for the barrage of the Nile, in the course of which there was a good deal of interesting experience as to the effects of a heavy rush of sand-laden water on the structure of the dams. We do not quite understand, however, why in this connection the name of Sir Benjamin Baker is never mentioned; he surely had a good deal to do with the later schemes, as a consulting engineer in regard to the construction of the principal Nile dam, or so we have always understood.

Anyone reading through this book of a little over a hundred pages, will find that he has obtained a great deal of practical information, given in a concise but readable manner, in regard to a very important class of operations for providing water for countries where the natural supply is apt to be variable, and, if let to itself, insufficient. It is a subject which it is worth while to know something about, even if one may never be called upon to take a part in it.


THE OPERA HOUSE, PARIS.

(See "Some Notable Buildings in Paris," page 140.)

The Essentials of a Country House. By R. A. Briggs, F.R.I.B.A. London: Batsford, 1911. *7s. 6d.*

This may be considered to be mainly a small book of useful hints as to points desirable to be kept in view in producing a country house that shall be both agreeable and healthy to live in, accompanied by a good many illustrations, in the shape of plans, and photographs of the exterior aspect of houses.

The author would very likely be ready to admit that there is nothing very new in the book, but it contains a good deal of advice, given in a concise and pithy manner, which may be new and useful to some of those who intend to build houses for themselves; not that it is intended in the least (the author is careful to point out that) to encourage the purchaser and reader of it to be his own architect, but it may suggest to him what to expect or ask for from his architect. It is certainly well that the client should have it explained to him that, even in a simply designed house, it is the detail which makes or mars the design, and that he will not get the right kind of detail by going to a builder. Whether the client will in all cases understand this, or even care about it, is another matter.

We are glad to see that "half-timber work is not advised, unless it is real half-timber work," and not a sham laid on to the walls; an absurdity against which we have many times protested. We do not agree that "the reception rooms generally should face the south," though we see, from many published and exhibited plans, that it is a favourite theory with English architects. The drawing-room should, if possible, but not the dining room; still less the billiard room (where it is not top-lighted). Indeed, in the chapter on the billiard-room the author suggests that it may face west or north (north is preferable), but we observe that in one of his plans the drawing room, study, dining room, and billiard room all face the same way, with large bay windows. The same aspect cannot be best for all of them. Which aspect it is we do not know, as none of the plans have a compass point attached to them; an indication which a house plan should never be without, though many architects are sinners in this respect. We regret also to find any architect countenancing, as we see in more than one plan, the disagreeable and (as we think) barbarous arrangement of having bath and water-closet in the same room, which should never be allowed even in the smallest house which can accommodate a bath room. A bath room should have no such associations.

It seems rather surprising that it should be thought necessary, at this time of day, to devote a paragraph to (as one may say) smashing the plate-glass window; we thought all people of well-regulated minds had given up the idea of plate-glass for a dwelling house, though we remember meeting a very distinguished engineer, not so very long ago, who had quite an angry contempt for any other kind of window. That was the practical tendency, probably, of the engineering mind. A window is an arrangement for letting in light; ergo, the more light it lets in the better. However, we surmise that there are plenty of engineers who would not put plate-glass in the window of their dwellings. The author recommends the sash window, and we should agree entirely, if it were not for that machinery of the weight-and-pulley and its necessary casings; it is the most convenient form of window, taken all round, but we prefer the casement, because it can be fixed in a solid frame. If anyone could invent a really satisfactory way of working the sash window without the hollow casings it would be incontestably the best form of window; but none of the patents proposed with this object seem to have met with general acceptance.

The chapter on "Gardens," by which the formal garden and no other is intended, is very good, and we profoundly agree with the warning, "never be mean with the width of the terrace", no space is better bestowed in laying out a garden than that which secures a wide, spacious terrace, it is everything to the dignity of the house.

The good taste, architecturally, of the exteriors illustrated leaves nothing to be desired.

IMPROVEMENT OF THE L.C.C. FIRE SERVICE.

The General Purposes Committee of the London County Council report that they have had under consideration the general question of the substitution, for the existing horsed fire appliances, of motor appliances. To enable them to consider the matter fully, they asked the Fire Brigade Committee to furnish full particulars of the proposed programme for the next few years in regard to the purchase of motor fire appliances. The Fire Brigade Committee forwarded the following statement, showing the numbers of the various appliances likely to be required for the complete conversion of the equipment of the brigade to mechanical traction, and the total approximate cost—

Nature of appliances.	Number required for service.	Number required for spare.	Total number.	Estimated cost of each.	Total estimated cost.
				£	£
Petrol or electric motor (escape) vans	68	34	102	940	95880
Petrol motor fire engines ..	61	15	76	940	71440
Motor cars	8	2	10	350	3500
Petrol or electric motor (long ladder) vans, and other miscellaneous appliances	19	4	23	1400	32200
Total	156	55	211	—	203020

The total cost of £203,020 is rounded up to £210,000, which, spread over a term of seven years, gives an estimated approximate requirement of £30,000 a year. It includes appliances provided for in the current year's estimates, but is exclusive of any river plant (fire floats, etc.).

After a long discussion of the financial aspect of this matter, the General Purposes Committee proceed: The Fire Brigade Committee originally proposed that for the next seven years an expenditure of £30,000 a year should be charged on the rates. We understand that this proposal was made, not because they did not consider the expenditure in itself a proper capital charge, but because they thought that if the rate of expenditure could be equalised, it was better to charge the cost direct to rate account and save interest. With this principle we agree as a general rule, but we doubt the wisdom of its application to the present case. First, it is doubtful whether an expenditure of £30,000 in each year would in practice be adhered to. The motor appliances have been tested up to a point, but it is not unlikely that further developments will take place, in working out the scheme, which may lead to temporary delay at certain stages. On the other hand, should the early deliveries of new plant prove to be entirely satisfactory, there would probably be a strong desire to hasten the provision of the new equipment throughout the service; but, much as this might be desired, it could not be done without further increasing the burden on the rates, already exceptional, in particular years. If the charge were made to capital account there would be greater elasticity in the scheme, because the expenditure of the supply of the new plant would not in that case so seriously affect the charge on the rates of particular years. There is, however, another consideration, and that is the effect of the saving in annual upkeep, particularly in horse hire, which will accompany the supersession of the horsed plant. This will be a steadily growing sum of appreciable amount.

In addition to the cost of providing the motor appliances, it will be necessary to provide for the cost, chargeable wholly to maintenance account, of certain alterations at about 53 of the existing fire-stations. These alterations consist of the provision of petrol stores and motor pits, the heating of appliance rooms, the strengthening of appliance room floors, and the increasing of the height of appliance room doors. The Fire Brigade Committee state that it has been possible at the present time to frame only an approximate estimate of the cast of these works, but that the total cost may be put at £15,000. The necessity for this expenditure occurs only during the first seven years.

The Committee are advised that petrol motor fire engines will last for at least seven years, petrol-driven motor (escape) vans for ten years, and electrically driven motor (escape) vans for fifteen years. From these terms it may be taken that an average life of about ten years may be assigned to all motor fire engines, escape vans, and other heavy appliances, irrespective of type.

A NEW SETT-MAKING MACHINE.

At the engineering works of Mr. John A. Sangster, Pittodrie Street, Aberdeen, there was exhibited last week a new sett-making machine, which has lately been invented by Mr. C. G. Smith, Stockholm, Sweden. Samples of all the different granites were tried, including Rubislaw, Kemnay, Dancing Cairns, and Cove. In the first operation the stone is traced with a pneumatic tool and turned over, and the hammer, which weighs 130 lbs., is brought down on the stone, breaking it where it has been traced. After this the blocks of stone are placed on a chisel-shaped anvil beneath the cleaving hammer, which has a chisel-shaped edge, and the stone is thus easily split. The hammer can be raised as high as suits the different kinds of granites, and further pressure can be brought to bear on the hammer by a spiral spring, if required. After the stones have been treated in this manner, they are conveyed to the sett-makers to be finished, but as a number of them are practically ready for the market, very little dressing is needed. The quantity of setts which can be made by a complete machine requiring three men to work it would be about 20 tons per day, and as much as 30 tons of setts have been turned out in Norwegian and Swedish granites. The machine is constructed of steel channels and angles, and the gear consists of a friction wheel mounted on a shaft on which is also mounted the arm of the hammer. This arm consists of a series of steel plates in the form of a spring, and in this way the hammer makes a feathery stroke. Another friction wheel of a smaller size engages this larger wheel, causing the hammer to be raised or lowered at the will of the operator by means of a lever. The machine can be driven by an air engine, electric motor, or any othe power which may be available, and an ai compressor driven from the same shaft i fitted to the back of the machine for supplying the air to the pneumatic hamme for the first or tracing operation.

Those present were very favourably impressed with the work that the machin carried through, and are satisfied tha there is a future for this new appliance.

COMPETITIONS.

Skegness and District Cottage Hospital.

Mr. Ernest R. Sutton, F.R.I.B.A., ha been appointed assessor in the above competition.

Central Library, Deptford.

The Deptford Borough Council, at it last meeting, agreed to invite quantit surveyors to quote their terms for execut ing all the work in connection with quan tity surveying at the above building.

Proposed Fire Station, Hendon.

The Hendon District Council hav decided to erect a central fire station on site adjoining the Council Offices. Si selected architects are to be invited to sub mit competitive designs for a complet scheme, which will include housing accom modation for the firemen.

The Federal Capital, Australia.

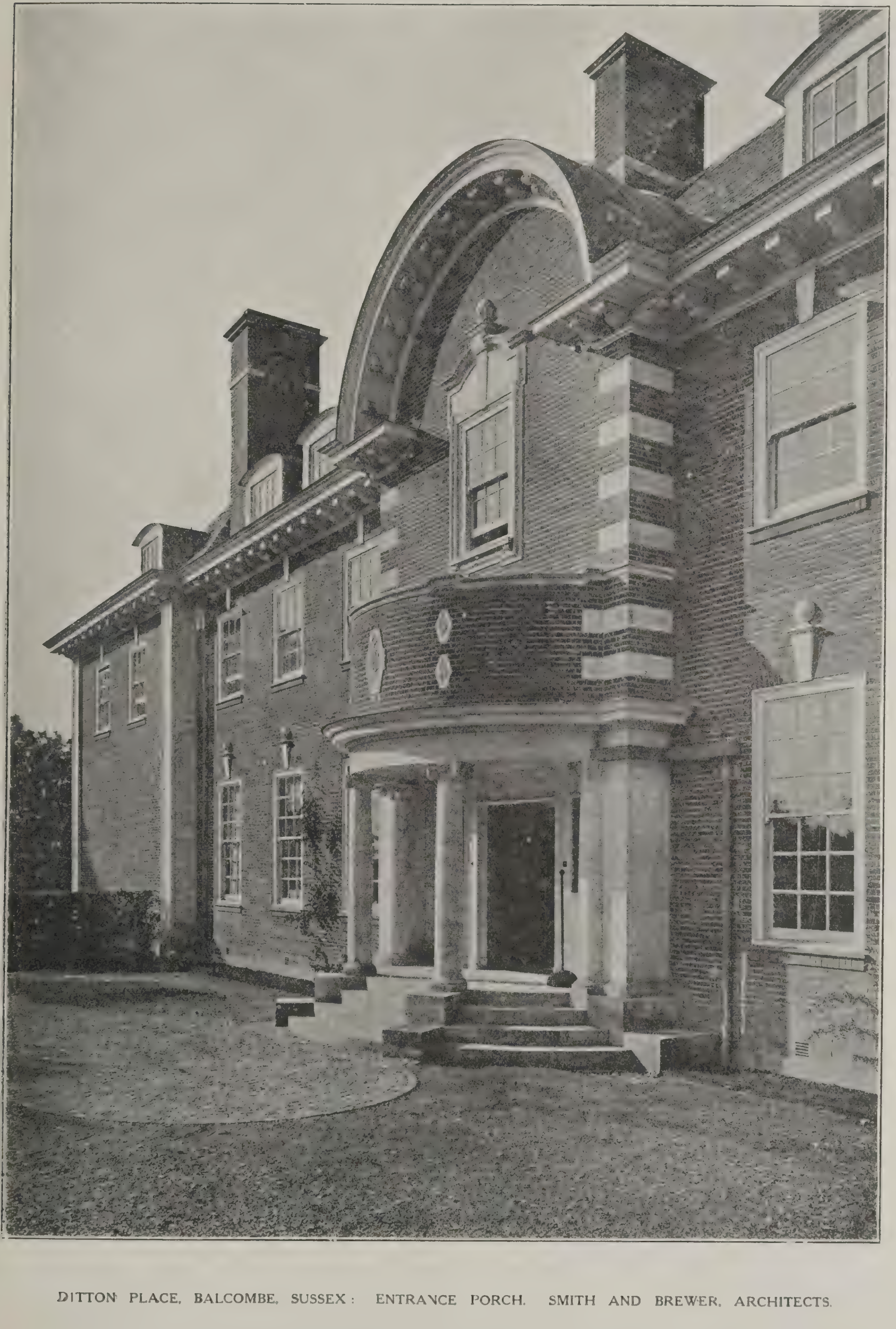
A deputation from the R.I.B.A. recentl waited upon Capt. Collins (representin Sir George Reid), and drew attention t certain irregularities in the above compet tion. It is anticipated that the High Com missioner will be successful in obtainin more satisfactory conditions by his repr sentations to the Australian Governmen

Town Hall at Winnipeg, Canada.

It is proposed to add to the Town Ha at Winnipeg an annexe which is estimat to cost about £103,000. If the proposal adopted, a competition will shortly opened for an entirely new building, whic with the annexe, is to form a comple scheme. Communications should addressed to the City Engineer, Win peg, Canada.

Proposed New School, Newcastle-on-Ty

The Education Committee invite desig and estimates, from architects practisi in the city, for a senior mixed school a a junior mixed school at Walker Ga Both are to provide accommodation 365 children, as follows: Four classroo for fifty each, and three classrooms fifty-five each. An assembly hall is also be provided. The cost per head of £ which must not be exceeded, is to inclu everything except site value, caretake house, and boundary walls. An asses will be nominated by the R.I B.A. An fants' department, to be erected at so future date, must be shown by a bl plan. The architect of the accepted des will be appointed to carry out the wo Premiums of £20 and £10 respectively be paid to the authors of the second a third designs. Competitors may take tracing of the site plan at the Educat Offices, Northumberland Road, Newcas on-Tyne. Designs must be accompan by a brief description of sanitary ap ances, ventilation, heating, and ot features which cannot be properly in cated on the drawings. There should a be included a description of the mater proposed to be used and an estimate the total cost.



DITTON PLACE, BALCOMBE, SUSSEX: ENTRANCE PORCH. SMITH AND BREWER, ARCHITECTS.

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THE R.I.B.A. SUMMER EXAMINATIONS.

The Preliminary.

e preliminary examination, qualify- for registration as Probationer 3.A., was held in London and the pro- al centres indicated below on the 12th 13th June. Of the 146 candidates tted, claims for exemption from sit- were allowed to the number of forty- and the remaining 102 candidates examined, with the following results :

ntre	Total Examined	Passed	Relegated
ndon	50	36	14
stol	12	11	1
eds	8	7	1
nchester ...	27	23	4
wcastle ...	5	4	1
	—	—	—
	102	81	21

The Intermediate.

e intermediate examination, qualify- or registration as Student R.I.B.A., eld in the undermentioned provincial es on the 12th, 13th, 15th, and 16th 127 candidates were examined, the following results :—

tre	Total Examined	Passed	Relegated
don	85	37	48
stol	15	9	6
ds	5	3	2
chester ...	13	4	9
vcastle ...	9	6	3
	—	—	—
	127	59	68

ollowing table shows the number of es in each subject of the intermedi- amination :—

Classic Architecture	41
Mediæval Architecture ...	47
Renaissance Architecture ...	66
General Questions	48
Theoretical Construction ...	36
Descriptive Geometry ...	31
Applied Construction ...	48

The Final and Special.

final and special examinations, ing for candidature as Associate A., were held in London from the une till the 7th July. Of the 136 ates examined, 59 passed, and the ing 77 were relegated to their . The passed candidates are as —the † prefixed to a name signi- hat the candidate entered for the examination, which is designed for cts in practice and chief assistants ed by the Council from the pre- y and intermediate examinations m submitting testimonies of study :

M. S. R., Chiswick, W.
Laurence Mortimer, M.A., Hamp-, N.W.
, E. E., Chelsea, S.W.
ER, P. L., London, S.W.
S, Hubert Joseph, Goudhurst, Kent.
N, W. T., Cambridge.
T, J. A., Haverstock Hill, N.W.
R. H., Southsea.
ORD, A. G., Ealing, W.
K. S., Putney, S.W.
, B., Bradford.
M., London, W.C.
K, J. E., Blackheath, S. E.
, L. H., Harrogate.
J. C. G., Glamorgan.
W. F., Chester.
C., Shepherd's Bush, W.
N, C. A., Derby.
A. F., Prescot, Lancs.
, L. J., Exeter.
T, W. T., Bradford, Yorks.
N, B. M., Croydon, Surrey.
Gorringe, W. S., Seaford, Sussex.
Hake, G. D. G., London, S.W.
Harding, C. A., Glasgow.
Home, G. W., London, W.
Howitt, T. C., Hucknall Torkard.
Keasley, J. N., Redhill.
Knight, F. W., Chelsea, S.W.
Lawson, W., Gateshead-on-Tyne.
Leroy, A. D., London, N.E.
Logan, P. N., Bristol.
Long, C. W., Streatham, S.W.
Lucas, W., Hammersmith, W.
Martin, M. R., Ealing, W.
Mennie, F. E., Mile End, E.
†Merriman, H. I., Kensington West.
Mottram, A. H., Hampstead, N.W.
Owen, G. B., Hampstead, N.W.
Parker, T. A., Colne, Lancs.
Paterson, J. W., Edinburgh.
Pritchard, I. M., Beaumaris, Anglesey.
Samson, H. L., Streatham Hill, S.W.
Scott, B. W. H., Clapham Park, S.W.
Swannell, C. M., Muswell Hill.
Swindells, F. H., Preston, Lancs.
Tapper, M. J., St. John's Wood, N. W.
Thornton, H., Dewsbury.
Tickle, A. G. W., London, E.C.
West, H., East Dulwich, S.E.
†Westbye, J. T., Primrose Hill, N.W.
Whitehouse, A. E. M., Heaton Moor.
Wigzell, N., Sunderland.
Williams, L. E., Purley.
Wilson, A. W., Peterborough.
Winter, C. R., Bournemouth.
Wormald, H., Leeds.
Wright, C., Hyde Park, W.
Young, A. M. C., Wimbledon Common, S.W.

The following table shows the number of failures in each subject of the final examination :—

I.	Design	57
II.	Principles of Architecture ...	54
III.	Building Materials	15
IV.	Principles of Hygiene ...	47
V.	Specifications	24
VI.	Construction, Foundations, etc.	48
VII.	Construction, Iron and Steel etc.	52

Election of Licentiates.

At the Council meeting of the 20th July a large number of candidates were elected Licentiates R.I.B.A. in accordance with the provisions of By-law 12.

Plans for new law courts and police buildings have been approved by Bournemouth Town Council, and the architects (the architect of the Office of Works and the Borough Architect) have been requested to invite tenders for the work.

LICENTIATE TO FELLOW.

The following announcement has been made by the Royal Institute of British Architects with respect to the special examination of Licentiates to qualify for candidature as Fellows R.I.B.A. :—

The question of establishing the examination required by Clause 2 of the Supplemental Charter to be passed by Licentiates who, being otherwise qualified, desire to be admitted to Fellowship of the Institute has been for some time under consderation by the Council. The matter having been referred to the Board of Architectural Education a scheme has been drawn up which has received the approval of the Council, and arrangements are in progress for holding an examination at an early date.

The candidate will be required to submit for the approval of the Council working drawings of one or more of his executed buildings, which may be supplemented by photographs thereof, and by original sketches or measured drawings of actual work. Should the work so submitted be, in the opinion of the Council, of sufficient merit, the candidate may be exempted from any further examination. Should the work so submitted be, in the opinion of the Council, inadequate, his application will not be further entertained. If the drawings submitted are approved by the Council, the candidate will be required to submit himself to an examination which will be held on the premises of the Royal Institute of British Architects, or elsewhere, as may be appointed by the Council of the Royal Institute.

Ten days before the examination is held a list of subjects will be issued to all candidates, and from this list each candidate will be required to select one subject, and to announce to the Secretary of the Royal Institute, five days before the examination, which subject he selects. When the candidate attends at the appointed place of examination, he will be furnished with particulars of the selected subject, and he will have to prepare a set of working drawings of the subject, and such details as may be required, together with full descriptive notes. The candidates will also be required to write a short paper or report on a subject previously selected by himself and approved by the Council. Four days will be allowed for the examination, and the candidate may be required, at the option of the Council, to attend subsequently for an oral examination on his papers. Candidates must provide their

PONT ALEXANDRE III., PARIS.

own drawing-boards and instruments. The fee for the examination will be six guineas, which sum must be sent to the Secretary R.I.B.A., with the candidate's announcement of the subject which he selects. If the candidate fails to pass the examination the fee will not be returned to him, but he will be allowed to sit for one subsequent examination without payment of any further fee.

Should a candidate be admitted and pass, he will be qualified, subject to Section 8 of the Charter, for candidature as Fellow.

Should a candidate not be passed by the Council he will be informed of the fact, but the names of unsuccessful candidates will not be announced or published.

BY-LAWS AND ARCHITECTURE

In a paper read at the Belfast Congress of the Royal Sanitary Institute, on "The Influence of Building Regulations on Architecture," Mr. H. D. Searles-Wood, F.R.I.B.A., said: Some people are of the opinion that the time has come when there should be a general Building Act for the whole country; let us hope if this comes to pass that it may be so drawn as not to stereotype existing methods of construction, but stimulate new and better methods than at present. It might be a good thing to encourage architects to work out the strains and stresses in their structures by making a law that the methods of calculating the designs should be submitted to the District Surveyor, and if found correct the construction should be allowed, and thus do away with all those cast iron schedules and rules that so often hamper an original design.

It may be said that these are matters which do not directly influence architecture; but with the introduction of new materials and methods of construction, new means of expression must be found. It is true that over 4,000 years ago men were using the same materials as are now commonly in use, but during that time what varied expression has been given to the use of these materials. Each succeeding race has written its history in monumental works that are our most cherished possessions, and we in our time must strive to leave behind us some monuments worthy of the age in which we live.

In the ensuing discussion on Mr. Searles-Wood's paper, Mr. John Slater (London) said that architects might congratulate themselves that the stringent building laws of the Egyptians were not in existence to-day. If they had been the profession would not have so many people coming into it. Mr. Searles-Wood had been rather reticent as to what the influence of building regulations on architecture was—whether it was good or evil. He thought himself it was not necessary to have minute instructions for architects in connection with steel buildings.

Mr. Brodie, Borough Engineer of Blackpool, said that the most carefully drawn up by-laws did not cover all the points which arose from time to time. As to an Act for the United Kingdom, it should do no more than lay down general principles. Something should be left to the good judgment of the architect and to the common-sense of the authorities.

Mr. E. T. Hall (London) said that if cast-iron rules were laid down experiments in new buildings would be prevented. The great drawback to the present system was that occasionally they came in contact with authorities not gifted with common-sense, and who were very obstructive and troublesome. Ninety-eight per cent. of the surveyors were sensible men, and legislation should be for them rather than the minority. Referring to litigation over light and air spaces, Mr. Hall commended the magnificent common-sense of the decision of the House of Lords in the Colls case. It was said that there were no building laws in London till after the Great Fire, but he believed that William the Conqueror laid down laws with reference to party walls.

Mr. H. A. Cutler (City Surveyor, Belfast) said hard and fast bylaws were not applicable to steel and ferro-concrete buildings. The latter class of building was enormously increasing surveyors' duties. Regarding building bylaws in general, the more cast-iron they were the better. Bylaws were absolutely necessary, especially when they came to the case of the jerry-builder. Although they had no bylaws in Belfast for regulating steel-framed and ferro-concrete buildings, they had used such discretion as was necessary in dealing with such structures. They had not enfor
bylaws regarding thickness of walls. Th
had used proper discretion, and giv
facilities to those who used such materi
as were not contemplated when the byla
were made, and the committee had
every case in a reasonable way.

Sir Henry Tanner advocated elasti
in regard to bylaws.

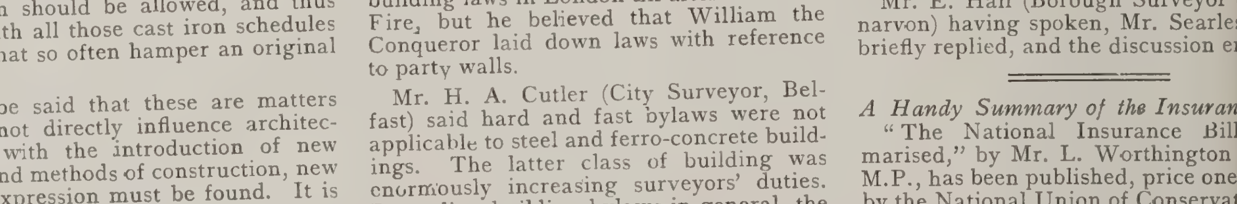
Mr. P. C. Cowan (Irish Local Gove
ment Board Inspector) said that the bu
ing bylaws in force in Ireland could h
no prejudicial effect on any reputable ar
tect's practice. Elasticity in bylaws
relation to the building of ordinary
perty would be a vast mistake. They n
not think that they could get on with
bylaws. He was sorry that in Ireland s
of the local authorities waived their
laws, but in every case it was to the de
ment of the public. It was said that ar
tects were groaning under the burde
bylaws, but he never could find out w
they were groaning about.

Mr. James Munce, Belfast, said he n
saw jerry-building till he went to L
don, but when he went there he got
eyes opened. In Belfast they went on
principle of building houses for peopl
live in, and not to look at. Bylaws
tected officials from those who wen
squeeze them to do what was wrong. T
was no trouble in Belfast with archite
the trouble was with the small man
employed nobody. They needed a
regulating the frontage of a house and
size of rooms. The delegates would
their eyes opened if they would visit s
of the three-shilling workmen's house
Belfast and see the value that was give

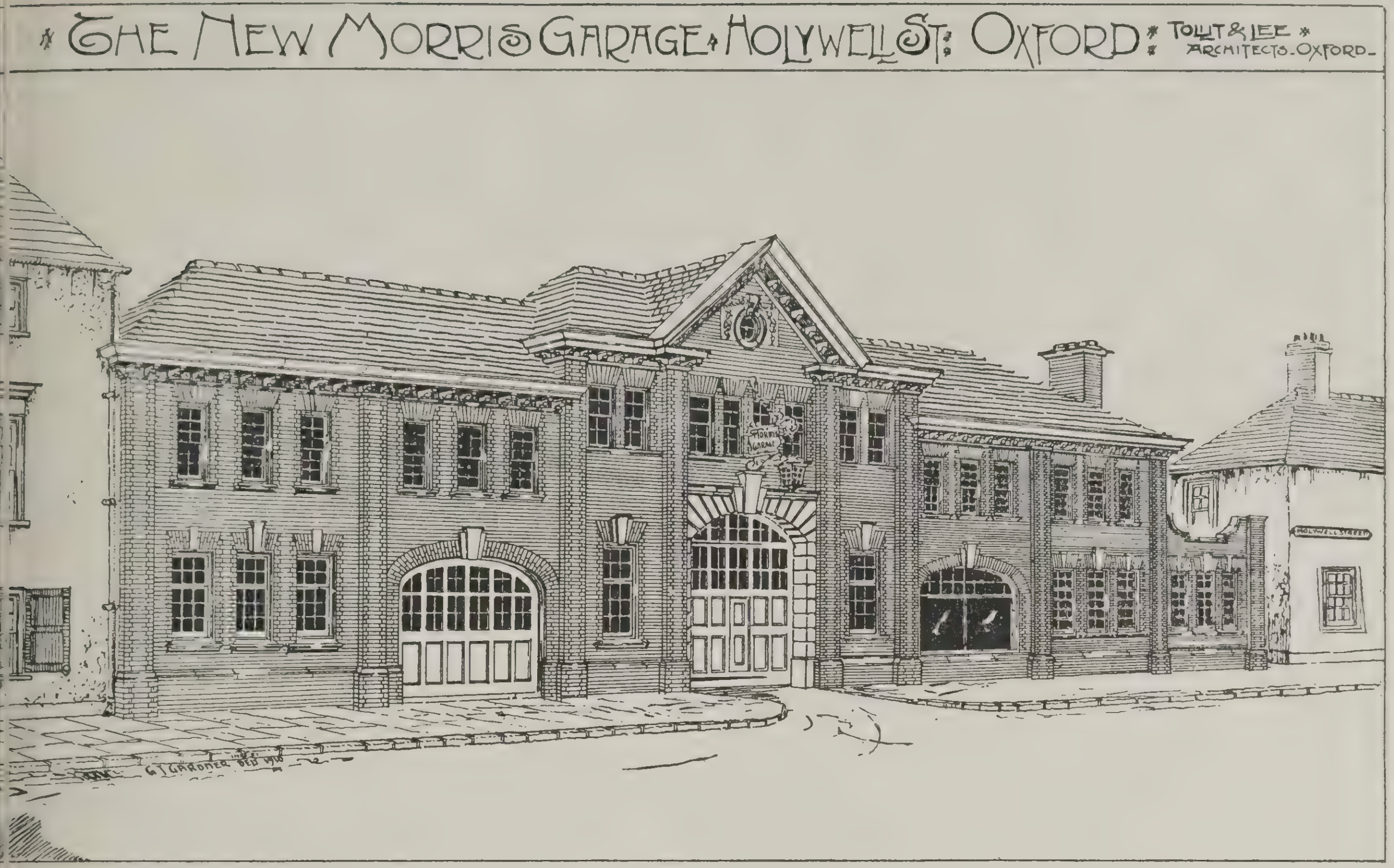
Mr. E. Hall (Borough Surveyor of
narvon) having spoken, Mr. Searles-W
briefly replied, and the discussion ende

A Handy Summary of the Insurance

"The National Insurance Bill S
marised," by Mr. L. Worthington E
M.P., has been published, price one pe
by the National Union of Conservative
Constitutional Associations and
Unionist Social Insurance Committee
Stephen's House, Westminster. It
been prepared for the use of those
desire to remember the sense and no
actual legal phraseology of the clauses
there is a full index to the actual Bill



DITTON PLACE. GROUND-FLOOR PLAN. *(See Centre Plate.)*



TAILS, OLD AND NEW.—XX.

th Porch, Lavenham Church, Suffolk.

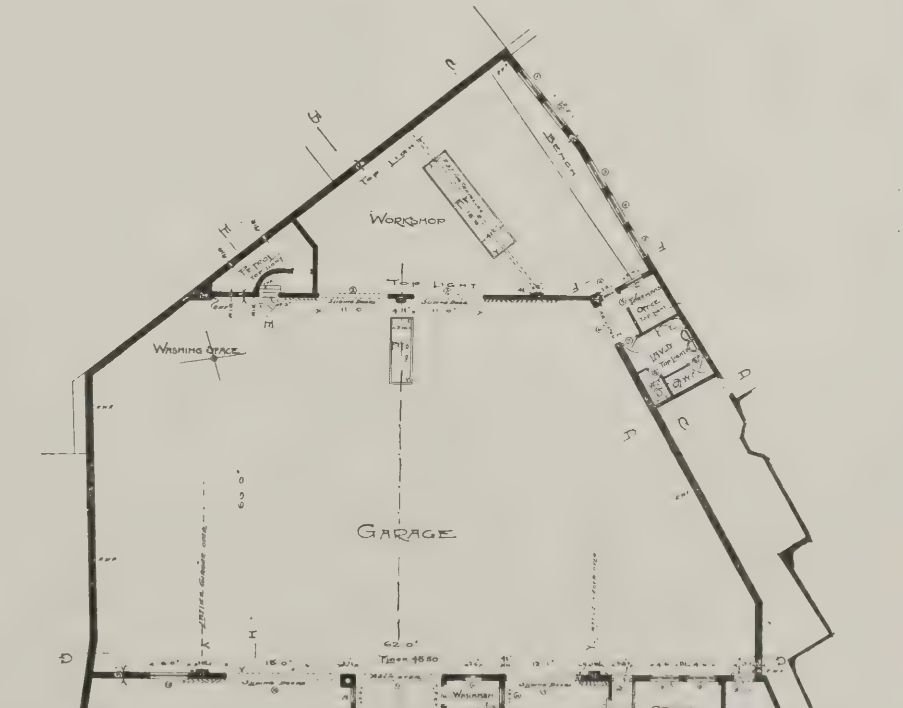
venham Church, one of the most iful in England, and one of the best n and most frequently studied and hed, was founded by the Veres, Earls ford, whose cognizance, a boar, fills pandrels on each side of the entrance . The wealth of the detail is remark- the arrangement of the shields over trance being particularly fine.

W MORRIS GARAGE, OXFORD.

his building has recently been erected erton College, the ground landlords, e lessee, Mr. W. R. Morris. The site t outside the old city wall, and partly the line of the old city ditch; conse- ly it was necessary to carry the ations down to a considerable depth. nt concrete piers 5 ft. square were and the intervening foundations formed with reinforced concrete. The of the upper floors and flats are nent and ballast concrete, reinforced xpanded steel.

e street front is faced with Lawrence's nell bricks for quoins and arches, uiting stone dressings.

e general contractors were Messrs. tchins and Sons, of Oxford, and the ntractors were: Constructional steel- Messrs. Redpath, Brown and Co.; e and workshop floors, Stuarts' lithic Co., Birmingham; roof glaz- Messrs. Hope and Sons, Ltd., Bir- am; heating and hot water, Messrs. e and Co., London; asphalte flats, Messrs. Lawford and Co., London; ry fittings, Adamsez Ltd., and Doulton and Co.; ironmongery, Mr. James Gibbons, Wolverhampton; tiled roofs, Messrs. T. Lawrence and Sons, Bracknell; garage roof, "Eternit" slates—which, by their lightness, elegance, and fire-resisting qualities, are admirably suitable for this class of work—by Speaker and Co.; sliding door fittings, of which there are a considerable number, Messrs. Lockerbie and Wilkinson. The architects were Messrs. Tollit and Lee, of 7, St. Aldate's, Oxford.



GROUND PLAN

CORRESPONDENCE.

The School of Architecture, University College, London.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

DEAR SIR,—Whilst thanking you for the notice of the students' exhibition at University College that appeared in your issue of July 26th, may I be allowed to point out that the statement that "at Gower Street architectural study is only a department of general education" is misleading.

The School of Architecture at University College is a distinct department. All the students in it are architectural students, who are either taking a preliminary course before going into offices, or else are engaged in more advanced architectural study. My department is linked with other departments of the College, and I think happily so, as, in my opinion, such connection is essential for the well-being of an architectural school. Only in that sense is it a "department of general education."

F. M. SIMPSON.

Safe Load on Factory Floor.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—May I enquire if your calculations on page 11 (July 5th, 1911) are quite correct? On the 8th line from the bottom of the page you state that l = 13 ft. or 156 in., which is perhaps near enough; but does not this assume that both ends are fixed, or continuous over both supports? whereas you stated previously that you assume "the joists being continuous over one support." One the line "Now $W_1 = 2\frac{1}{2} \times \frac{8}{12} \times 150 \div 12 = 10.416$ lbs. per inch run"; this should be 20.833 lbs. per inch run. From this the equation for W_2 at bottom of column produces 9.268 lbs. per inch run, and if this is correct then we see that the floor will not sustain anything like 134 lbs. per foot super. The next equation is quite wrong in any case, and should read $\frac{9.268 \times 12}{2.5} = 44.49$ lbs. per foot super, which is not one-third of what you make it.

WM. GRIFFITHS.

[In the article in question it was said that the negative bending moment over the support is $wl^2 \div 8$ which is quite correct for a distributed load on a continuous girder where the outside ends are free. The bending moments at the middles of the girders are less. We did not reproduce the drawing that accompanied the original enquiry, but we scaled the clear span to be about 13 ft., and not 15 ft. as would appear from the dimensions given in writing. We are glad our correspondent has pointed out the error. It shows how important it is to check ordinary arithmetical calculations, especially when performed on the slide rule. If the span be actually 15 ft., the safe super-load the floor would sustain would be even less.]

Dairy Planning.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Perhaps the following information may assist your correspondent, "V. W. M." The Board of Agriculture and Fisheries publish various papers dealing with farming, and amongst them will be found the report on "Milk and Cream Regulations (Ct. 491), 1901, price 7½d.; Various Butter Regulations; leaflet No. 151, "Cleanliness in the Dairy"; leaflet No. 179, "Devonshire Cream and Soft Cheese-Making"; leaflet No. 192, "Farm Butter-Making." These leaflets can be obtained free on application.

H. SLICER, M.S.A.

The Way Out of the Architectural Maze.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—"The Way Out of the Architectural Maze" suggested in your issue of the 19th of July last, should be read and considered by all interested in architectural education at the present time.

I am in entire agreement that we should concentrate our aims on the production of modern architecture of a quality comparable to Greek architecture of the time of Pericles.

But I am equally in disagreement with your writer as to the best means to attain this.

First, only by careful study of the various styles of the past can a student learn the good and bad, the logical and illogical in architecture. History is taught for the purpose of learning what is bad quite as much as for what is good; and I would add that only by the careful study of the Greek, Byzantine, and Gothic styles can anyone fully appreciate the solutions of different problems, all actuated by the same spirit but worked out to entirely different results.

This spirit is the spirit of design which accepts and acknowledges the constructional necessities or nature of a building, and covers these naked bones in beautiful forms which, though clothing the building, do not hide or distort the structural form.

Taking into consideration the extreme difference between modern problems in England and those tackled by the ancients in Greece, it is probable that modern architecture produced by a Greek in the Greek spirit would result in something as different from ancient Greek work as Gothic or Byzantine is different.

The Greeks dealt with problems from which the need for internal lighting and large floor space was wholly absent; yet
it is these two necessities, coupled
narrow streets and confined sites, wh
are the modern architect's chief difficult
He is dealing with essentially walled bu
ings, while the Greeks dealt almost enti
with colonnaded buildings of one forn
another. Even the windows in our w
are not openings in the same sense as
spaces between the columns of a co
nade, since they are enclosed by the m
or less flat surfaces of glass and gla
bars.

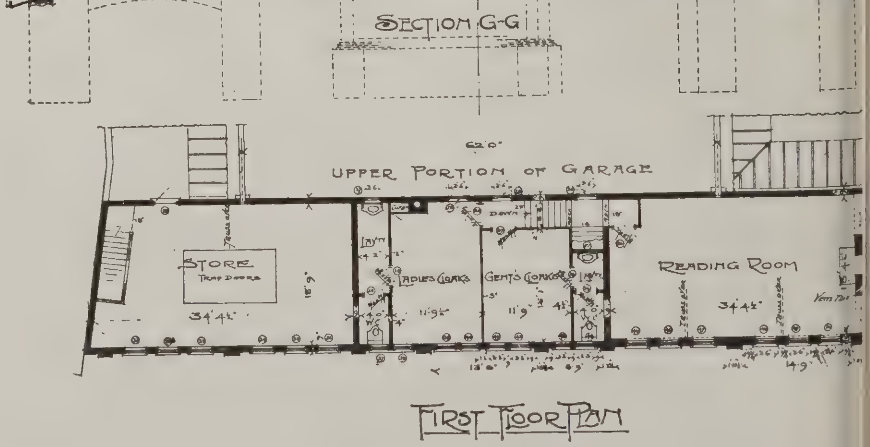
Any so-called Neo-Greek moven
must aim at solving the modern prob
as the Greeks might have solved it, but
as the Greeks solved a totally diffe
problem.

If, instead of applying some form of
so-called orders in front of our walls
piers in order to help the comp
tion (as is said), we were to attemp
clothe these constructional features as
Greeks clothed theirs, we might eve
ally produce a wall and window arch
ture comparable in quality to G
column architecture, although ent
different in style.

To achieve this point of view, an
work on these lines, it is surely b
not to confine one's study to Greek l
architecture alone, but also to study
arched style of the Eastern Roman
pire and the work of mediæval crafts
so similar in spirit, yet so differen
form; not omitting either the wor
those Renaissance masters, who were
masters of their art and not the slav
tradition.

The object is to teach not the deta
different styles, but the true spirit
meating all the best work of the
and present. If we bear in mind
the object of architecture is to c
rather than to cloak a building, to r
and not to obscure the structure,
shall we be on the right road to ac
our aim. We certainly need a de
architectural aim in our educational
tem, but the last thing we want is an
revival.

ALAN POTT



MORRIS GARAGE, OXFORD.

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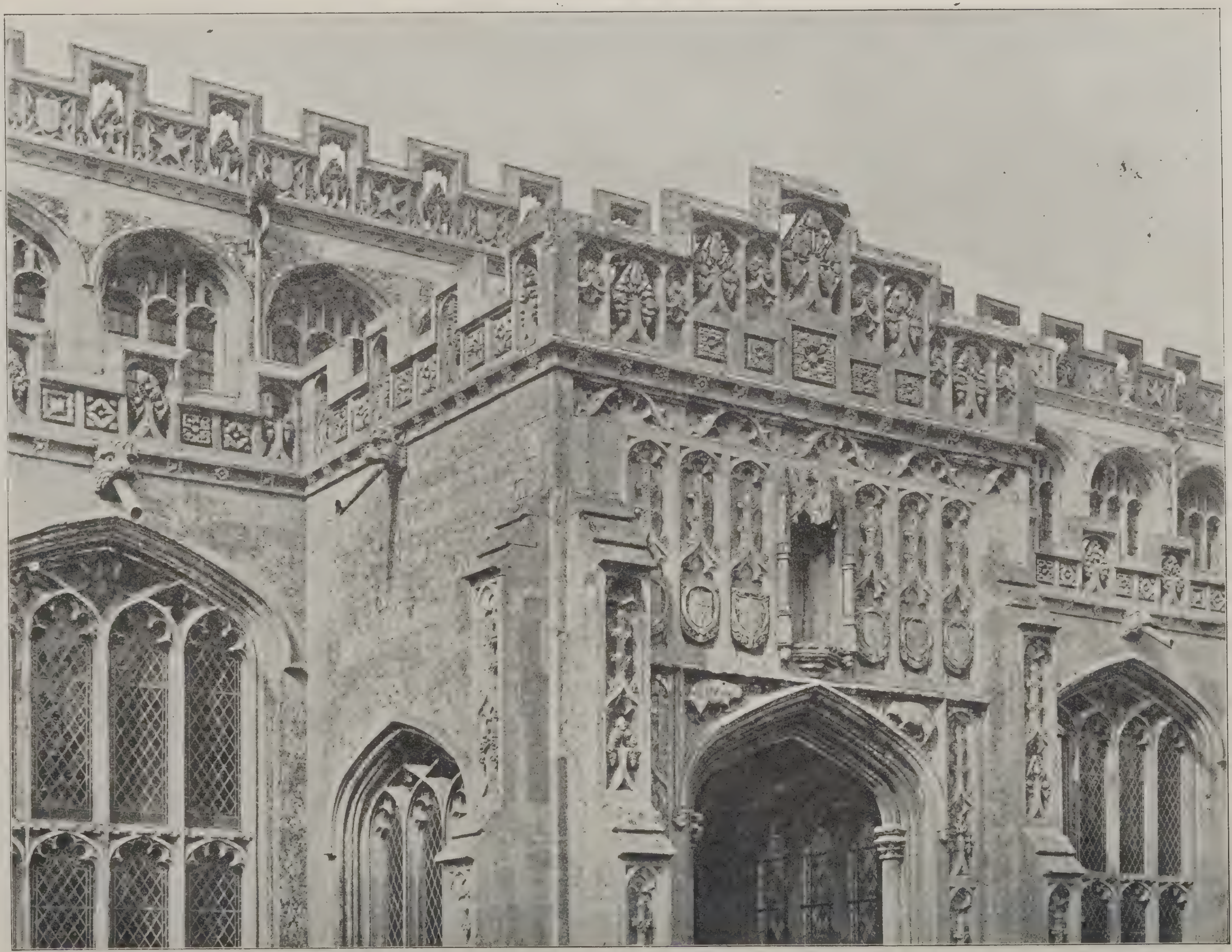
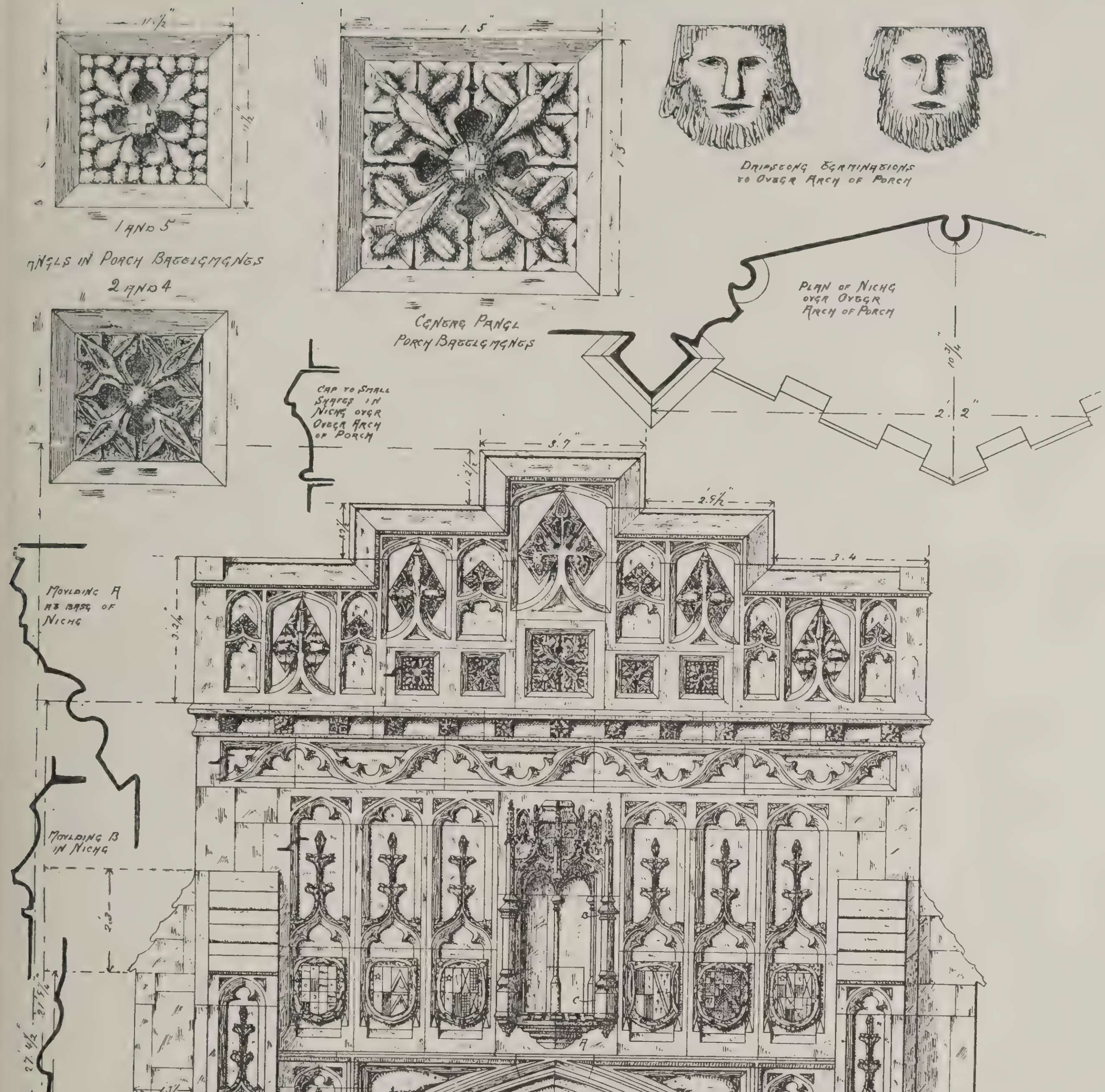


Lavenham Parish Church, with its noble tower and great wealth of ornamental detail, is probably more frequently visited, photographed, and sketched, than any other parish church in the kingdom. The boar shown in each of the spandrels is the cognisance of the Veres.

SOUTH PORCH, LAVENHAM CHURCH, SUFFOLK



SOUTH PORCH, LAVENHAM PARISH CHURCH. MEASURED AND DRAWN BY W. GILLBEE SCOTT, A.R.I.B.A.

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ENQUIRIES ANSWERED.

.B.—Enquiries on the following subjects are not desired :—

(1) Enquiries about buildings to measure in particular towns and districts.
(2) Enquiries embodying questions which have been set in examination papers.
(3) Enquiries which ask for or require the preparation of special designs as part of the answer.

Marylebone Town Hall.

O.H.W.H. (Hull).—Your enquiry for articulars of this competition should be ddressed to the Town Clerk, Marylebone.

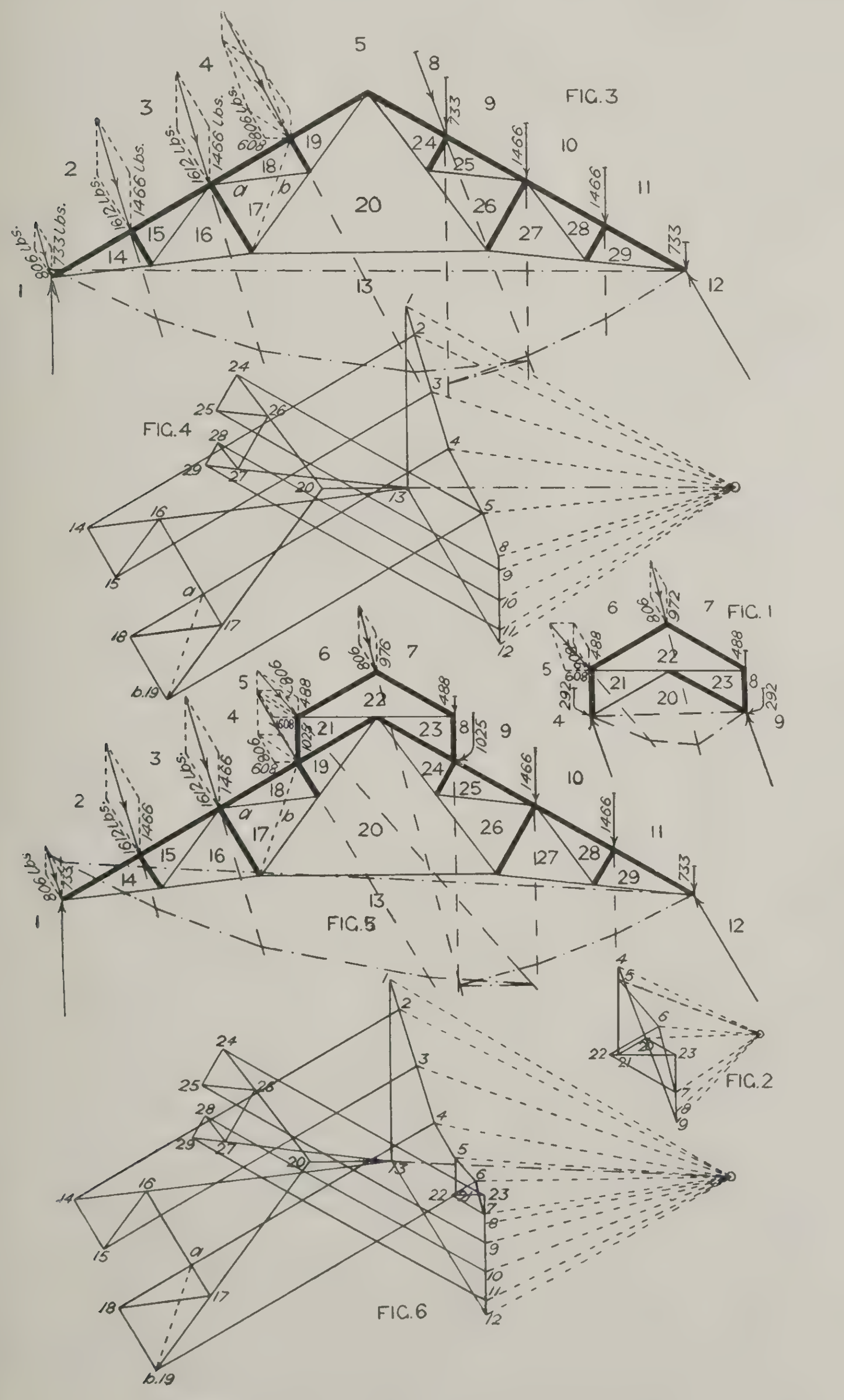
Stress Diagram for Roof Truss.

C. W. B. (Oxon.) writes asking for ssistance with regard to some stress diarams he had endeavoured to work out. He has drawn one of his loads to the rong scale and thus has been unable to ake the diagram close properly; he has lso taken the weight of the vertical side f lantern as acting at the top instead of the bottom. The frame diagram of lantern light will be as Fig. 1 and the stress diagram as Fig. 2, giving the two reactions and stresses in the upper portions of the principal rafters. The frame diagram of main truss will be as in Fig. 3, and it will be seen that the reactions from the lantern are taken as loads on the main truss. The stress diagram (Fig. 4) may be easily worked out, using a substituted member a—b to find point 19, and the stresses found in the upper parts of principal rafters must be added to those produced by the weight and wind on the lantern light as previously found. This is the best method to adopt in the case of a complicated truss; but in a simple truss such as this the stress diagram may be worked direct from the complete frame diagram as shown in Figs. 5 and 6.

In reply to a further question, the "green removable deposit" on the red brick walls of the swimming hall appears likely to be a growth of moss due to damp brickwork in a warm moist atmosphere. Silicate of soda would probably be more effective as a wash than distemper, but the writer has had no experience of it for this purpose.

In reply to the third question, it depends upon what is understood by reliable, and whether the roof covering is for a temporary or permanent building. Useful information might be obtained from firms manufacturing or selling Willesden roofing, ruberoid, vulcanite, jodelite, uralite, etc.

HENRY ADAMS.



STRESS DIAGRAM FOR A ROOF TRUSS.

Glistening Rough-cast.

W. C. A. writes: "Can you direct me to a specification for rough-cast work on brick walls, such as I understand is being done in the Bournemouth and Christchurch district? A client of mine has seen some rough-cast executed in a way which seemed to him peculiar to the district—'glistening in the sun, and tinted as if by the colours of the fine gravel or granite composing the final coating or dash.'"

—What your client has seen is probably the form of rough-cast known as "Depeter," in which the pebbles or fragments of broken stone are pressed into the floating coat while the latter is soft. Derbyshire spar is most often used for this work and has the glistening effect described, although crushed granite or marble chippings would probably impart a similar effect in less degree. Ordinary two-coat work in either lime or cement may be treated in this way, the final coat being applied dry, either by pressing fair sized fragments into the soft stuff individually, or by repeatedly dashing finer crushed grit against the face until sufficient has adhered to give the result desired. In neither case, however, is the result particularly good, and it is much more favoured by speculating builders than by architects.

G.

Surveyors' Institution Examination.

A. W. (Leeds) writes: "There are three divisions in the Surveyors' Institution Examination, namely, land agency and valuation, building, and quantities. Would the Government accept (under appointment for Valuation Office) any of these? Which division is most suitable to one seeking a public appointment, Government, Municipal or Rural Council? Have you published a list of books required in the intermediate and final?"

—We do not think that the Valuation Department has laid it down as a *sine qua non* that candidates for their appointments should have passed in any particular sub-division of the Institution examinations; but the work of the Department being mainly valuation, it is clear that sub-division 2 would, as a rule, prove most useful.

Sub-division 3 is that most generally taken by surveyors to local authorities. The list of books which are recommended for the Institution examinations is too long to publish, but any candidate can obtain it by applying to the Surveyors' Institution, 12, Great George Street, Westminster, for a syllabus, price 1s. 6d., the list being printed at the end of that book.

ACCIDENTS, INSURANCE, AND COMPENSATION.

At the monthly meeting of the Executive Council of the Yorkshire Federation of Building Trades Employers, held at York, the Federation Secretary called the attention of the members to the valuable co-operation and active assistance which they could give to insurance companies in connection with workmen's compensation. Every reasonable precaution should be taken to prevent accidents. Several serious accidents have recently occurred through the breaking of putlogs or other materials used in the construction of scaffolds. Great care should be used in the careful selection of such materials, and in the systematic examination and frequent inspection both of scaffolds in use, and of materials to be used for such purpose. The width of the scaffold should also be sufficient and adequate. This is strongly urged both on humane and financial grounds.

Roof Work.

In connection with roof work it was suggested that some provision should be made to save a workman from falling on to the ground in the event of his slipping, either by means of planks or otherwise on the roof, or scaffolding being provided just under the spouting. When work is taking place on a scaffold, a suitable guard-rail should be provided. A plank should be fixed at the outer edge of all scaffolding to prevent the falling of material on to workmen or third parties.

Falling Materials.

A considerable number of claims have lately arisen from flags and other heavy material falling on to workmen's feet. Some provision should be made to protect the feet, and the co-operation of members in these matters would be of mutual advantage. Some employers appear to think because they are insured that their liability has ceased, and that they can wash their hands completely of any responsibility in connection with claims. This is scarcely an honourable position to take, as it has a tendency to increase the compensation in respect of an accident arising to the particular employer's workman, and this is often reflected by his being called upon to pay increased premiums. Premiums are based by insurance companies on accident experience, and negligence in dealing with these, or lack of sympathetic co-operation with the insurance company, will undoubtedly lead to increase in rates, if not, indeed, to the risk being declined. It further increases the average payment of the trade, and has thus a very serious effect upon rates generally. It is therefore in the interests of employers when notifying accidents, if they have the slightest doubt as to the reasonableness of the claims, to give the fullest particulars to the insurance office in order that liability may not be admitted until the claim is placed beyond doubt. Members should satisfy themselves that the claim is reasonable and legal; and if there is any ground for suspicion, inform the company accordingly in order that suitable enquiries may be made before the claim is admitted. It is in the mutual interests of employers and insurance companies that claims should be kept within reasonable limits, compatibly with an honourable recognition of the workman's right in the case of genuine accidents.

To Prevent Malingering.

Employers should promptly inform the company when they are of opinion that the workmen is fit for suitable employment, and co-operate by finding such employment for a reasonable period. Malingering would thus be reduced considerably, and if valued co-operation was given by employers universally, it might lead to gradual reduction in the heavy premiums at present in operation.

Admission of Claims.

Employers should realise that their interests in the prompt settlement of claims is identical with that of insurance companies, and while requiring fair and honourable treatment of workmen's claims, these should only be admitted when they are distinctly legal, and then only for the period of actual disablement.

A NEW WATER TUNNEL.

At a special meeting last week, the Metropolitan Water Board considered a report from its Works and Stores Committee, with regard to the proposed water tunnel under the Thames at Twickenham. The report stated that at the present time there were two 36 in. trunk mains conveying unfiltered water from the West Middlesex intake at Hampton to the reservoirs at Barnes, which crossed beneath the Thames just below Richmond Bridge. These pipes were of cast iron, and should one of them burst or become injured in any way the situation might become very serious. In case of accident to either or both mains, there was one 42 in. main only in addition to convey unfiltered water to Barnes. Three trunk mains of the Southwark and Vauxhall district ran under the river at the same point, and when one of these burst some time ago, several months elapsed before it could be repaired, and the work cost about £5,000. The chief engineer had reported that in order to safeguard the supply of the western district it would be advisable to construct a tunnel under the Thames of a size sufficient to take the two 36-in. mains of the western district, and the three of the southern district. The committee therefore recommended that the estimate of £32,000 for the work be submitted to the Finance Committee and that advertisements be issued inviting tenders for the work. The committee's report and recommendations were adopted.

NEW BUILDINGS FOR KING'S COLLEGE, OLD ABERDEEN.

An extensive addition to the buildings at King's College, on the site of the Aulton Brewery, in High Street, Old Aberdeen, will soon be commenced. It is expected that tenders will be received for the works early in September, and that the buildings will be completed in October next year. Their estimated cost is £10,000. The new buildings have been designed by Mr. A. Marshall Mackenzie, A.R.S.A., of Messrs. A. Marshall Mackenzie and Son, Aberdeen, in the sturdy Gothic style of King's College Chapel, which dates from about 1494 A.D. The walls will be faced with a freestone from St. Andrews, similar to that of which the chapel is supposed to have been built. This will give a certain uniformity to the whole suite of buildings in construction as well as in design. The south side of the new building, measuring 160 ft., will face the north side of the chapel, and the west side, measuring 80 ft., will face the High Street. The building will consist of two storeys and basement, having on the ground floor four large classrooms, two retiring rooms for professors, two lavatories, two staircases, and the kitchen, parlour, bedroom, and washing-house of the college sacrist. On the first floor there will be three large classrooms, two professors' rooms, staircases, and two bedrooms and bathroom belonging to the college sacrist's house.

The classes accommodated in the new building will be English, history, and modern languages. In the basement a cloakroom and lavatory for lady students will be provided, and here also the heating chambers and stores will find a place. The floors will be of fire-proof construction, and covered with pitch-pine block flooring.

OUR PLATE.

Ditton Place, Balcombe, Sussex, is built upon an old site, where, in designing the new house, regard had to be paid to the carefully modelled gardens, in which yew hedges had been planted and terraces formed. Conformably to the owner's wish, also, the positions of the chief rooms of the old house were retained, and the additional space required was gained by pulling down the stables to the north and rebuilding them close to the northern boundary of the property, certain offices being incorporated with them.

The walls are faced with small Wrotham red bricks, with dressings of Portland stone. The roof is covered with thick Precelly rock-faced slates, while the eaves cornice is of wood. The main corridors and staircases are of fire-resisting construction. Some fine mahogany bookcases, designed by Mr. H. P. Horne, architect, for the old house, were re-fixed in the north end of the library, and the fittings ceiling, and fireplace of this room were designed by him to harmonise with them.

The architects were Messrs. Cecil C Brewer and A. Dunbar Smith, and th general contractor was Mr. J. A. Hunt, o Hoddesdon, Herts. The stables were buil by Messrs. Maides and Harper, o Croydon.

LUDGATE HILL STATION IMPROVE MENT SCHEME.

A proposal has been submitted to th Corporation of the City of London on be half of the London, Chatham, and Dove Railway Company to erect shops at th ground level with three floors above, o a portion of the site of the forecourt Ludgate Hill Station in New Bridge Stree which is at present enclosed by railing Under the scheme an area of about 29 yards superficial of land would be adde to the public way. The company aske the Corporation to bear the cost of alte ing the pavements and reconstructing th gullies, estimated by the engineer at abou £800. The Corporation agreed to th scheme, subject to the following cond tions :—(1) That the company should mak adequate provision behind the propose line of improvement for vehicles to ent or leave the station; and (2) that no clain should be made in respect of the propose buildings in the event of the Corporatio requiring to widen the public way.

A letter was read from the Lond County Council suggesting that, as th leases of the adjoining property on t south side of the station were about to e pire, the question of an adequate stre improvement, to which the London Coun Council might be prepared to contribut ought to be considered. The communic tion was referred to a committee.

OCIETIES AND INSTITUTIONS.

e Society of Architects and the R.I.B.A.

In the August issue of the official journal the Society of Architects, it is stated that negotiations between the councils of Royal Institute and of the Society are oceeding, and members will be duly tified, after the recess, of the position affairs.

In the meantime the work of the Society regard to the election of new members hich is always in abeyance during the nmer), and all its other activities, will resumed as usual in the autumn.

The examinations will be held early in tober, the annual general meeting will e place on October 19th, and all the angements for the new session have en made and entered into. and until the olutions passed by the general body of mbers in regard to the proposals ween the Society and the R.I.B.A., or be hereafter passed, have been con-ned, the position of members of the ciety is unaffected.

The examinations to qualify for Member-p of the Society will be held as usual in ndon and also in provincial centres in first week in October.

The following are the sections and sub-ts:--Section I.: Architecture—plan-g, design, architectural history. Sec-n II.: Building—construction and terials. Section III.: Practice--con-cts, specifications, quantities. Section : Sanitation—ventilation, draining, ter supply, etc.

Students of the society may take the mination by sections, or in the case students who are 21 years of age or over, whole examination at one sitting for an lusive fee.

Certificates of proficiency will be arded in those sections in which a dent candidate qualifies, or a full certi-te as the case may be.

A holder of the four sectional certificates proficiency issued by the society, or ir equivalent in certificates of exemp-n, who has attained the age of 21 years, y apply for the full certificate entitling holder to make an application for mem-ship.

Pending the completion of the negotia-s with the R.I.B.A., the possibility of examination being the last to be held the society should be borne in mind by nding candidates.

Nottingham Architectural Society.

The Nottingham Architectural Society year selected Windsor Castle and Eton lege as the places to visit on their ual summer excursion, and a large ty of members and friends joined the ng last week. Mr. Nutt, the resident itect of the Castle, very kindly met the ety and personally explained the many resting architecural features. A visit first made to the quaint half-timbered se-shoe Cloisters, built by Edward IV., then the party went over the Curfew ver, constructed by Henry III., which ains a peal and clock over 300 years and the famous curfew bell. St. rge's Chapel, a magnificent specimen Perpendicular architecture, was then explained. The banners and crowns King George, Queen Mary, and the ice of Wales, which recently were ed in the Knight's Chapel, were pointed These with the other helms, crests, banners form a very beautiful and im-sive specimen of heraldry.

visit was then paid to Eton College. was founded in 1440 by Henry VI., inally for 25 scholars. Through the tesy of the Provost the society were shown the school chapel which contains many beautiful memorials of distinguished Etonians; the quaint old school dining hall, with its three fire-places and iron reading-desk, and the library, which contains a very valuable collection of old books and documents from the time of the foundation of the college. A return to Windsor was made through the historical "playing fields of Eton," from which the best views of Windsor Castle can be obtained. Mr. Nutt then conducted the society through the Albert Memorial Chapel, converted by Queen Victoria into one of the most magnificent memorials ever dedicated to the illustrious dead. In the crypt King Edward the Peacemaker lies interred.

Department of Architecture, University of Sheffield.

The prospectus for 1911-12 of the Department of Architecture of the University of Sheffield is just to hand, giving particulars of the various courses of architectural study.

The Department of Architecture was founded at the desire of the Sheffield Society of Architects and Surveyors, which is associated with the Council and the Senate of the University in its management. The Board of Architectural Education of the Royal Institute of British Architects has appointed Sir Aston Webb, R.A., and Mr. Halsey Ricardo to act as visitors.

The Department provides: (1) A two years day course, which gives a systematic course of training for students wishing to become architects, to be taken by them before entering an architects' office, though not necessarily before they are articled; (2) an advanced course, which forms a continuous course of study for students during their pupilage, and also for qualified assistants; (3) courses in surveying. All the courses are open to those who are already in architects' or surveyors' offices. The lecturer is assisted in the work and supervision of the advanced courses by leading members of the architectural profession in the city, and in the two years day course by members of the staffs in the faculties of arts, pure science, and applied science, and of the Technical School of Art. Students who are unable to take a complete course may attend parts.

The University grants first and second class certificates to students who have attended the two years day course, and the third year part day and part evening course, and have passed the prescribed examinations. Diplomas are awarded to students who have taken the two years day course and the three years part day and part evening courses, and who have complied with the regulations for the diploma, which are under consideration. The courses are adapted to the requirements of the examinations of the Royal Institute of British Architects. Subject to the approval of the Council of the Royal Institute of British Architects, exemption from the R.I.B.A. Intermediate Examination will be granted to students of the University of Sheffield on the same conditions as those applying to students of the Architectural Association of London. The architectural staff includes as lecturer Mr. W. S. Purchon, A.R.I.B.A.; assistant lecturer, Mr. James Miller, A.R.I.B.A.; instructors in architectural ornament, Mr. A. C. C. Jahn, A.R.C.A., and staff of the Technical School of Art; honorary lecturer for evening courses in design, Mr. E. M. Gibbs, F.R.I.B.A.; in English Architecture, Mr. C. F. Innocent, A.R.I.B.A.; in Italian Architecture, Mr. H. L. Patterson, A.R.I.B.A.

OBITUARY.

Mr. Edwin A. Abbey, R.A.

Mr. Edwin Austin Abbey, R.A., who died at his residence in Tite Street, Chelsea, on August 1st, and who has been esteemed as one of the most celebrated illustrative and decorative artists of our time, was born at Philadelphia in 1852. When he was about sixteen he studied under a landscape painter named Isaac Williams, and also received a certain amount of training in the classes of Pennsylvania Academy. When he was nineteen, he entered the publishing office of Messrs. Harper Brothers as one of their draughtsmen, and it is believed that his earliest published drawing was "The Destruction of the Vendôme Column," for "Harper's Weekly." In 1878, he proposed to Messrs. Harper the making of an elaborate series of illustrations to Herrick's poems, and he then came to England to make the necessary studies. In 1881 he came to England to settle. His illustrations of Goldsmith's comedies are among his most successful works, and his paintings of Shakespearian scenes are hardly less popular. He painted the official picture of the Coronation of King Edward VII. Of the many large decorative paintings, only one is in England—that of "The Treaty of the Loving Cup" at the Royal Exchange. The more important have been done for Boston and Philadelphia. In 1890 the city of Boston, which had erected Charles McKim's beautiful public library, determined that a great scheme of decoration should be carried out, and commissions were given to America's two foremost artists, Mr. Sargent and Mr. Abbey, as well as to Puvis de Chavannes. Five years later Mr. Abbey exhibited five of his pictures in a gallery in London. Rather curiously they represented the Legend of the Holy Grail. The subject had not been chosen, says a writer in "The Times," till many others had been tried and rejected, nor had it been executed till Mr. Abbey had passed months in Italy and studied Pinturicchi, Gozzoli, Carpaccio, Tintoret, and all the other great decorators whose works remain to us. He studied them, but it cannot be said that any one of them left any distinctive impress on his style. The "Holy Grail" of the Boston Library is a fine performance, and it is as much pure Abbey as "The Briar Rose" is pure Burne-Jones.

Last came the still greater commission which has occupied the last ten years of Mr. Abbey's life, and which, though the greater part is achieved, has, unhappily, been left incomplete, at least so far as one important picture is concerned. This is the great series of decorative works for his own city of Philadelphia. The State Capitol of Pennsylvania is a vast building of the usual Capitol type, containing the halls of the Legislature, the chief public offices, etc., and crowned with a dome. Mr. Abbey's last work has been to illustrate, for the House of Representatives, the history of the State. One large picture, "Penn's Treaty with the Indians," has already been seen at the Royal Academy; the pendant to it is quite unfinished; the ceiling—a flat circular picture for the dome, with figures of the 24 Hours of the Day and Night—is ready; and so, more than all, is the great ideal picture summarizing the whole history of the State. On a canvas no less than 34 ft. square—which was painted in three parts, to be invisibly joined—the whole history of Pennsylvania is shown, in groups of portraits beneath the throned figure of the State, in the regiment marching out to war, and in the miners working the wealth of coal and iron on which Pittsburg and other cities are based. Below the ideal figure are the first Judge, the first Bishop, and the other "patres patriæ"; Penn is in the centre, with Franklin; around are the men who built hospitals, helped forward education, preached Abolition, or, in the persons of Meade and Hancock, led the soldiers of Pennsylvania to war. This fine work is still in London.

Mr. Abbey was, to sum up, a great draughtsman with a great sense of style, much appreciation of history and literature, and at the same time of general romantic feeling which happily affected much of his work. His love for the juxtaposition of bright and striking colours was a distinguishing mark of his work. As he painted no portraits he was not brought much into contact with the patrons of that branch of art.

Since his marriage in 1890, Mr. Abbey had lived chiefly at an old manor house, Morgan Hall, near Fairford, where the artist built an immense studio, suitable for the great decorative works to which he afterwards devoted himself. Not very long ago he acquired also the pretty house in Chelsea in which he died.

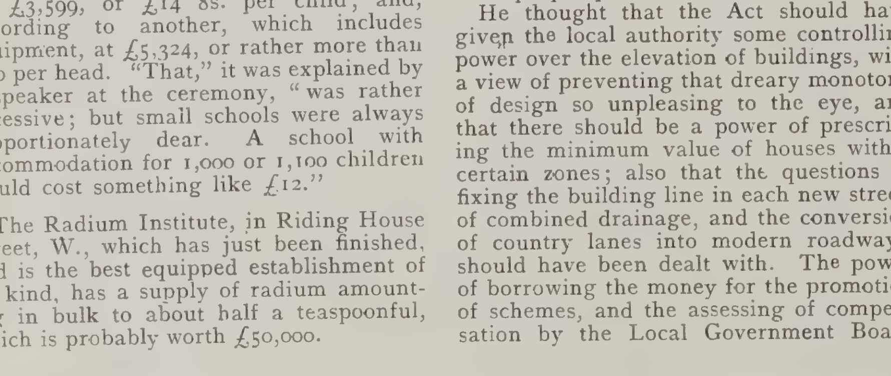
A new school, of which the foundation stone was laid last week, for Southampton, is to accommodate 250 infants. The cost is estimated, according to one calculation, at £3,599, or £14 8s. per child; and, according to another, which includes equipment, at £5,324, or rather more than £20 per head. "That," it was explained by a speaker at the ceremony, "was rather excessive; but small schools were always proportionately dear. A school with accommodation for 1,000 or 1,100 children would cost something like £12."

The Radium Institute, in Riding House Street, W., which has just been finished, and is the best equipped establishment of its kind, has a supply of radium amounting in bulk to about half a teaspoonful, which is probably worth £50,000.

A TOWN CLERK ON TOWN PLANNING.

At the recent meeting and town-planning conference of the Institution of Municipal and County Engineers, at West Bromwich, the Town Clerk of Sutton Coldfield (Mr. R. A. Reay-Nadin) contributed a paper on "The legal aspects of town-planning," in which he observed that the Housing and Town-Planning Act, as a distinct innovation in Parliamentary enactments, has brought about the possibilities of many legal problems, more particularly in respect of the building and restrictive covenants so often to be found in conveyances and leases. As one interested in the management and development of a large estate, he considered that a carefully thought-out scheme under the Town-Planning Act would not in anywise depreciate the value of property, but on the contrary, very considerably enhance it. There was no doubt that the great cause of depreciation in the value of property was the building of some smaller and inferior kind of houses attracting a lower class of residents than those in the vicinity, or else the erection of business premises which entirely altered the character of the neighbourhood. Under a town-planning scheme a good class neighbourhood could be preserved, and the provision of industrial premises and cottages for the working classes at the same time adequately dealt with, each in their proper part of the town.

He thought that the Act should have given the local authority some controlling power over the elevation of buildings, with a view of preventing that dreary monotony of design so unpleasing to the eye, and that there should be a power of prescribing the minimum value of houses within certain zones; also that the questions of fixing the building line in each new street, of combined drainage, and the conversion of country lanes into modern roadways, should have been dealt with. The power of borrowing the money for the promotion of schemes, and the assessing of compensation by the Local Government Board arbitrator, he considered excellent provisions of the Act. If those who were interested in land would only meet the local authorities and discuss the proposals for town-planning in a reasonable manner, remembering always that they would serve their own interest best by assisting in bringing about a sound town-plan, then there should be no difficulty in each town developing its future upon proper lines, and the mistakes of the past. which had cast such a burden upon the public, should be obviated.



THE CHAMBER OF DEPUTIES, PARIS.

THE EXAMINATION OF SURVEYORS.

A report has been issued [Cd. 5776] of a conference was was begun on May 31st last at the Surveyors' Institution, London, on the question of reciprocity throughout the Empire in the examination and authorization of surveyors. This conference was attended by delegates representing the Commonwealth of Australia, New Zealand, New South Wales, Victoria, Queensland, Western Australia, Tasmania, Canada,the Ordnance Survey of the United Kingdom, the Institution of Civil Engineers, and the Surveyors' Institution. The Government of the Union of South Africa, while recognizing the importance of being represented at the conference, found it impossible to send a representative.

Two meetings of the conference were held to discuss the broad principles underlying the proposals for reciprocity and to lay down the main lines upon which an agreement in the future might be arrived at; and then the drafting of the details was left to a sub-committee, which at four meetings considered questions relating to the syllabus of the examinations, the standard of knowledge required, and the course of training. Finally, at a third meeting of the delegates, it was decided to submit a series of proposals as offering some basis for an agreement between the bodies interested.

The delegates consider that a first essential must be the formation of a Centra Board, which would use its influence to keep up a uniform standard of examination for surveyors under any arrangemen for reciprocity which may be agreed to by the different Governments of the Empire and which would consider any proposal which might be brought before it for improving the working of any such agreement. It is suggested that this board should consist of a representative of each State, Province, or Dominion in the Empire which has the power of licensing land surveyors, together with a representative of the Institution of Civil Engineers, o the Surveyors' Institution, of the Ordnance Survey, and of the Colonial Office respectively.

All printed examination papers should be forwarded to this board immediately afte the holding of an examination, and published by the board annually, or more frequently if found desirable. It is considered that this would help to ensure that th standard of qualification agreed upon wa maintained by each examining body. Th existence of the board, and the knowledg that the papers set would be submitte to criticism, would in itself have the effec of inducing each examination authority t endeavour to keep up to the standar agreed upon; but should it appear tha it had been lowered in any particular case the board might call attention to it, an it is to be expected that the Governmen in question would be anxious to put th matter right.

he conference does not believe that a rd such as is recommended would have ch work, or that it would require any f. Its duties would be :—

) To peruse the examination papers in any part of the Empire under any eme of reciprocity which may be ided on, and to call the attention of the ernment in question to any which ear to fall below the standard.

) To consider appeals, which would ly occur.

) To consider any proposals which may laid before it for improving the work- arrangements for reciprocity.

he composition of this board must essarily preclude its meeting fre- ntly, but the delegates are of opinion the bulk of its work, especially that rred to in paragraphs (1) and (2), ht be carried out by correspondence, that very occasional meetings—say, a rule, once in four years—should ce. It is hoped that the Colonial Office ld undertake to receive communica- s for the board, to print and circulate mination and other papers to its mem- , and to summon meetings of the board n necessary.

he conference considered in detail the mination tests and training which ht be accepted as sufficient to ensure candidates for authorization as sur- ors were properly qualified, and drew syllabus which is printed in the report.

TIFICIAL LIGHTING OF HOSPITALS.

the Belfast meeting of the Royal tary Institute, Mr. John Darch read per on "The Artificial Lighting of pitals." No one, he said, who has had insight whatever into the work of ern hospitals could do otherwise than the greatest admiration for the splen- service and effective equipment that acterise those institutions; and yet it t be said that models of elegance and enic forethought as they are, their llence is usually marred by the en- ting thereon of systems of artificial ing that would justify a repetition of Nightingale's trenchant observation "the very first requirements in a hos- is that it should do the sick no harm." e value of illumination depends not the amount of light that is shed ghout a room, but on that which is cted from visible objects. An essen- part, therefore, of any scheme of ination is the colouring of walls and gs, the strength of which must be erly balanced with the amount of light able. Dark colours eat up the light are therefore wasteful. White ceil- cornices, and friezes, not glossy, with tinted walls and slightly darker s, will best serve the hospital and its tes. The commercial mind has sed that the health of the worker is vealth of the employer, and that the cost of better illumination is repaid ndredfold in time saved and better produced. Hospital authorities t do well to look at it in this light, other.

. L. Gaster, of the Illuminating En- ring Society, spoke of the importance od light, and said they did not want l Commissions and Blue Books. They talk themselves blue in the face, hat was wanted were facts.

jor Blackham said that the soldier often driven to the glare of the gin e and the brightness of the tavern by arkness of the barrack-room. The ge soldier would be glad of a lamp anywhere rather than in particular positions.

Major Morgan, Mr. P. C. Cowan, and others having spoken, Mr. Darch replied to the questions asked him, observing that not one hospital in ten had properly lighted operating theatres.

THE ABBEY ANNEXE.

As we announced last week, the Abbey annexe, which was put up for the accommodation of guests at the coronation of King George, has been sold to a firm of contractors, and will shortly disappear, probably for ever. The accompanying illustration of it may therefore possess some interest as a record and a memento, but not necessarily as an example for imitation, except perhaps in the very important practical detail that the roof on this occasion, as at the coronation of King Edward, was covered by Vulcanite, Ltd., of 118, Cannon Street, E.C., Belfast, and Manchester. The fact that vulcanite was chosen a second time for this important purpose proves the confidence that is felt in it not merely as a convenient system of roofing, but as an efficient fire-resistant. It was obviously of the utmost importance that a temporary structure placed against the venerable abbey should be provided with a roof that would be both within and without impenetrable to fire, and vulcanite is recognised as being fully capable of rendering this all-important service.

ROAD BOARD GRANTS.

The Road Board, with the approval of the Treasury, have made further advances to the 30th June, 1911, from the Road Improvement Fund to county councils and other highway authorities. The grants up to the 30th June (including those contained in the lists published on February 11th and April 29th last) amounted to £275,390, as follows: Improvement of road crusts (including grants towards tar macadam, etc., and surface tarring), £209,890; road widenings and improvement of curves and corners, £35,736; road diversions £9,598; construction and improvement of bridges, £20,166—total £275,390. In addition, the sum of £7,500 has been advanced by way of loan. These totals are exclusive of a large number of grants, amounting to about £400,000, which have been indicated, but the details of which are still under consideration.

NEWS ITEMS.

Dissolution of Partnership.

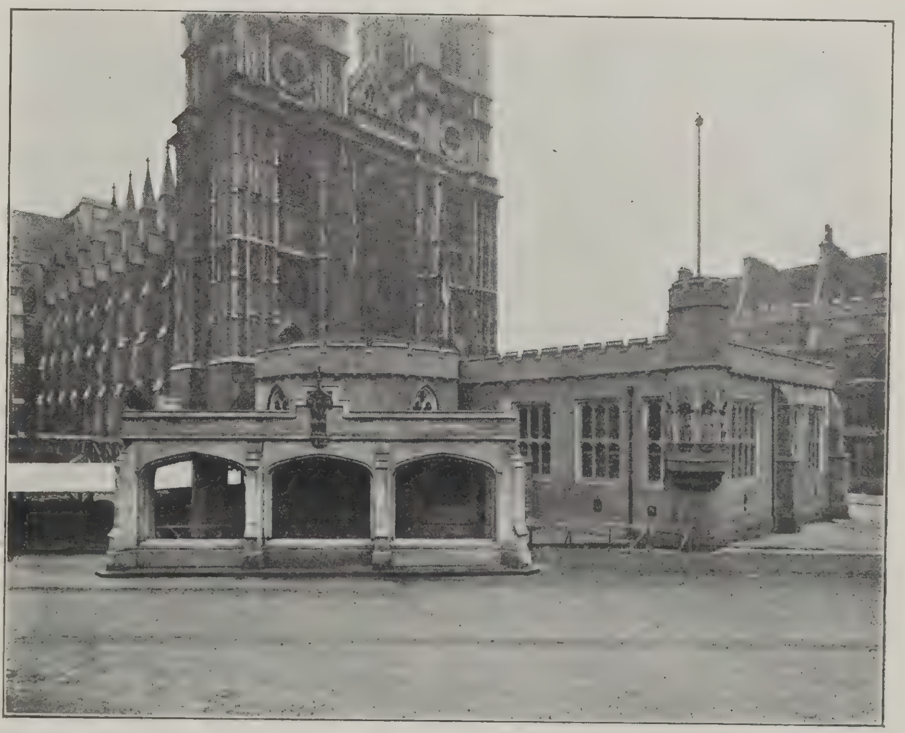
Mr. Cyril Masey informs us that Mr. Roy Young and himself have dissolved partnership, and that he (Mr. Cecil Masey) is continuing the practice as architect and surveyor at the same address, 4, Holles Street, Cavendish Square, W.

A Glasgow Window.

A stained-glass window that has just been erected in St. David's (Ramshorn) Church, Glasgow, in memory of the late Mr. George Robb, has for subject "Work": "Whatsoever thy hand findeth to do, do it with thy might." Beneath a mediæval archway is a female figure in a soft old rose-coloured robe, sitting at a spinning wheel. On the steps at her feet is a potter decorating a vase. Above those two figures, and seen through the archway, is a ploughed field with the figure of a sower against a massed cloud effect.

Tall Building for Sydney.

A contract has been placed in Sydney for the erection of a building which is to contain 13 storeys and will be 165 ft. high, or the highest of its kind in Australia. Besides the usual elevator there will be an express service with the first stop at the sixth floor, and also a lift of 2,800 lbs. capacity for goods. For purposes of fire protection a 5,000 gallon water tank will be installed, to be filled by an electric pump in 13 minutes. Letter delivery tubes will be provided to each storey, and there will be a vacuum cleaner on each floor, the suction for which will be created by an electric motor in the basement.



The annexe put up for the convenience of guests at the Coronation of King George and Queen Mary was, like its predecessor at the Coronation of King Edward and Queen Alexandra, roofed with Vulcanite. The porte-cochere, and the whole of the structure up to about 8ft. from the ground, was executed in the new fire-resisting material known as Kellastone, supplied by Kellastone, Ltd. (managing director, Mr. J. D. O'Brien), 33, St. Swithin's Lane, E.C.

THE ANNEXE TO WESTMINSTER ABBEY.

Hampstead Town Hall Extension.

The Mayor of Hampstead (Councillor W. Woodward, J.P., F.R.I.B.A.) has laid the foundation stone of the new buildings which are to be added to the Hampstead Town Hall on the Belsize Avenue side. The cost of the new block and of necessary alterations to the existing block will be £15,000, and the cost of the site is £3,500. The alterations and enlargement have been decided upon with a view to concentrating all the municipal offices under one roof. Mr. John Murray, F.R.I.B.A., is the architect, and Messrs. Patman and Fotheringham are the builders.

Nelson Hospital, Merton.

The new hospital at Merton, of which the foundation stone has been laid by the Duchess of Sutherland, will provide 24 beds, but has been designed so as to permit of additions which will bring up the total accommodation to 40 beds. The total building expenditure at present anticipated is £11,000, of which £8,000 has already been secured, including a grant of £1,000 by King Edward's Hospital Fund for London. The name of the institution will be the Nelson Hospital for Wimbledon, Merton, and District, the name Nelson having been introduced in memory of the fact that during the last years of his life, and when in England, Merton Priory was Lord Nelson's home.

The Diver at Winchester Cathedral.

Mr. W. R. Walker, diver, who has been engaged on underpinning works at Winchester Cathedral since 1906, and has almost finished his task, was presented last week by the Dean with a silver rose bowl as a token of the Dean and Chapter's appreciation of the manner in which he has carried out his work. The presentation took place in the presence of the Archdeacon of Winchester and Canons Braithwaite, Storr, and Vaughan, and Mr. Frederick Bowker, Chapter Clerk. The Dean said that the Chapter wished to give Mr. Walker a permanent memento of his long and somewhat monotonous work at the Cathedral. Although that work had been performed in the dark, it had been most conscientiously done, and was as well executed as if exposed to the light of day.

Rural Housing in Ireland.

Mr. Birrell's Bill to amend the law relating to labourers in Ireland has been published as a Parliamentary Paper. Clause 5 provides that where it appears to the Local Government Board, on the report of an inspector, that any house occupied as a dwelling house by a labourer is unfit for human habitation, the Board may at any time (if they are satisfied that suitable house accommodation has been obtained or is obtainable by that labourer elsewhere) direct the council of the rural district in which the house is situated to serve forthwith upon the owner of the house a notice requiring him to demolish the house, and it shall be the duty of the council to serve such notice as so directed. If the house is not demolished within the time specified in the notice, it shall be the duty of the council to demolish the house forthwith.

New Municipal Works.

The Local Government Board has decided to hold inquiries into proposed expenditure by public bodies as follows :—Sewerage, Drainage, etc.—Hoddesdon Urban District Council, £1,610 (August 14th); Kingston-upon-Hull City Council, £1,450 (August 11th). Water Supply.—Islington Borough Council, £4,900 (August 11th). Street Improvements, etc.—Rugby Urban District Council, £1,170 (August 11th); Dover Borough Council £1,490 and £1,460 (August 11th); Merthyr Tydvil Borough Council, £2,000 and £2,335 (August 11th); Coventry City Council, £1,775 and £1,006 (August 10th); Sutton-in-Ashfield Urban District Council, £3,200 (August 8th); Southall-Norwood Urban District Council, £1,066 and £650 (August 8th); Truro Town Council, £3,000 for housing scheme (August 9th). Various.—Merthyr Tydvil Borough Council, £23,320 for schools (August 11th); Spennymoor Urban District Council, £2,600 for cemetery extension (August 10th); Kent County Council, £10,000 for county offices (August 10th); Chiswick Urban District Council, £1,730 part cost of widening railway bridge (August 9th); Whitney Urban District Council, £3,400 for public offices (August 8th).

BREVITIES.

The roof of Tunstall market, Staffs, is to be re-covered at an estimate cost of £1,150.

Chatham is seeking sanction for a loan of £3,300 to be spent on street-widening.

Hampstead Borough Council has decided to borrow £15,000 for alterations and extensions of the town hall buildings.

Penistone Urban District Council have decided to build offices and a public hall to adjoin the free library, at a cost estimated at £3,600.

A new school for Sandbach, Staffs., is estimated to cost, in all, about £7,000. It will accommodate about 450 boys and girls, and the cost per head thus roughly indicated is £15 11s. 4d.

Huddersfield wants to erect a statue to King Edward, but is in some difficulty about the funds. The Committee have £480 in hand, but the sculptors approached require from £1,250 to £5,000.

An old Tudor mansion is included in the Foulden estate, Norfolk, which Lady Amherst of Hackney has instructed Messrs. Knight, Frank, and Rutley to offer by auction in the autumn.

"With a noise like a clap of thunder" the coping-stone of nine three-storey houses in Bramerton Street, King's Road, Chelsea, fell into the roadway on July 31st, injuring a postman who was passing.

The Lindsey (Yorks) County Council have agreed to contribute £20,000 towards the cost of a public bridge to be erected over the river Trent at Keadby, the Great Central Railway contributing at least £45,000.

The Governors of the Radcliffe Infirmary, Oxford, have agreed to spend £26,000 on additional buildings. The accepted tender (£21,137 6s. 1d) is that of Messrs. Woolridge and Simpson, of Oxford. Mr. E. Warren is the architect.

The old building in Limpsfield which was threatened with destruction in order that a new post office might be erected on its site, has now been demolished, thus in part destroying the charm of the village; in which, however. there still remain a few fifteenth century buildings.

The more monumental view which marks modern times with respect to educational buildings was humorously expressed by Canon Pryke when presenting the prizes at Blundell's School, Tiverton. In the old days, he said, all the materials required for a school were a book, a boy, an
a cane, and the great object of educatio
was to make the cane drive the book int
the boy. Nowadays, if one wanted to ski
a frog, a building costing £30,000 was pu
up to do it in.

In a competition recently held for a Ne
Free Christian Church, Schools, Institut
and Lecture Hall at Doncaster, the design
submitted by Messrs. Alfred J. Dunr
F.R.I.B.A., and J. B. Mendham,
Clarendon Chambers, Waterloo Stree
Birmingham, were selected, and the arch
tects have been instructed to proceed wit
the work.

FEDERATION NEWS.

Yorkshire Federation.

The monthly meeting of the Executive Council
the Yorkshire Federation was held at the Old Cou
cil Chamber, the Guildhall, York, on July 20th. M
A. J. Forsdike occupied the chair, and was su
ported by 40 delegates from the affiliated associ
tions.

Labour Exchanges.

In accordance with the request of the Nation
Administrative Committee to consider a comm
policy with respect to the use of Labour Exchang
by trade societies, a circular was read for issue
all the local associations calling their attention
the great desirability of Labour Exchanges bei
kept free from any suspicion of being used in t
interests of any one class.

National Insurance Bill.

The President reported that the officers of t
Federation had met and decided upon the ter
of the amendments to be submitted to the Ch
cellor of the Exchequer and the President of t
Board of Trade. It had been deemed advisable
print the observations in order that Yorkshire Me
bers of Parliament (including Grimsby), members
the Executive Council, and secretaries of local as
ciations could be supplied with a copy, and a f
ther number be available for the use of local as
ciations.

The President reported that the President of
Board of Trade had expressed his willingness
interview a deputation from the Federation
Tuesday, July 18th, at the Board of Trade Offic
He had therefore requested the ex-President, Co
cillor W. G. England, J.P., to accompany him,
the Secretary. The deputation were favoured w
an interview with: Rt. Hon. S. C. Buxton M.
President of the Board of Trade, Sir John Sim
M.P. (Solicitor-General), Mr. H. J. Tennant, M.
Sir Llewellyn Smith, K.C.B., permanent Secreta
Mr. G. R. Askwith, C.B, K.C., Mr. W. H. Beveri
(Labour Exchanges), and Mr. J. A. Webster, P
cipal Private Secretary.

The interview lasted about two hours, and ev
facility was afforded to the deputation for expl
ing the reasons for making the observations. Sc
of these were recognised as being of importar
and the deputation most gratefully acknowledge
close attention given to their arguments, the cog
questions which were asked upon them, and
great courtesy extended to them throughout
interview. They feel sure that considerable ber
should accrue to the members of the trade,
material information, which had not been previo
submitted was given upon matters which might
ceivably lead to important amendments. It
resolved that the best thanks of the Federation
tendered to the deputation for their valuable
vices in connection with the interview, and for
reasons they assigned in support of the Fed
tion's contentions.

Colonial Membership.

The notice of alteration in national rules for
purpose of creating "Colonial Membership"
considered and approved.

Lead Poisoning Enquiry.

A letter was reported from the National Secre
with respect to the tendency of the evidence w
was being submitted to the Departmental C
mittee dealing with lead poisoning, and reques
the views of the members on the important p
which had been raised.

It was reported that a copy of the letter
been forwarded to each member of the Council
local secretary, and a request made that obse
tions should be forwarded to the Federation S
tary not later than August 12.

The Federation Secretary called the attentio
members to certain points with regard to workm
compensation insurance. His observations ar
produced in another part of the present issue.

The best thanks of the Federation were tend
to the Rt. Hon. the Lord Mayor of York for
courtesy in granting the use of the Council Cha
for the Federation meeting.

Mr. Hoggard, on behalf of the Bridlington A
ciation, invited the Federation to hold the Septe
meeting in that town. It was resolved to sus
the August meeting, and to hold the next me
of the Federation in September at Bridlingto
Friday, September 15th.—J. DAVIDSON, Secretar

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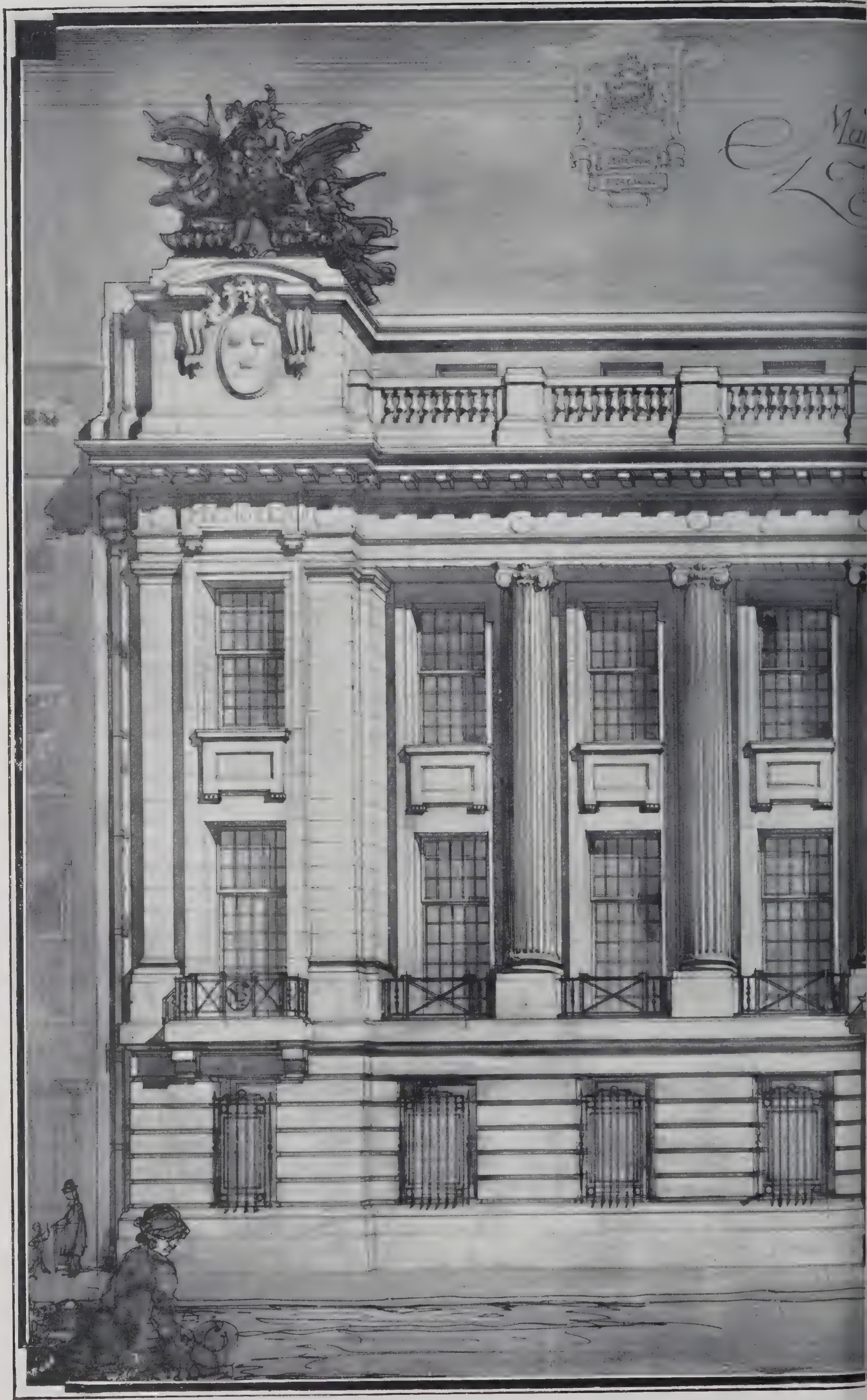
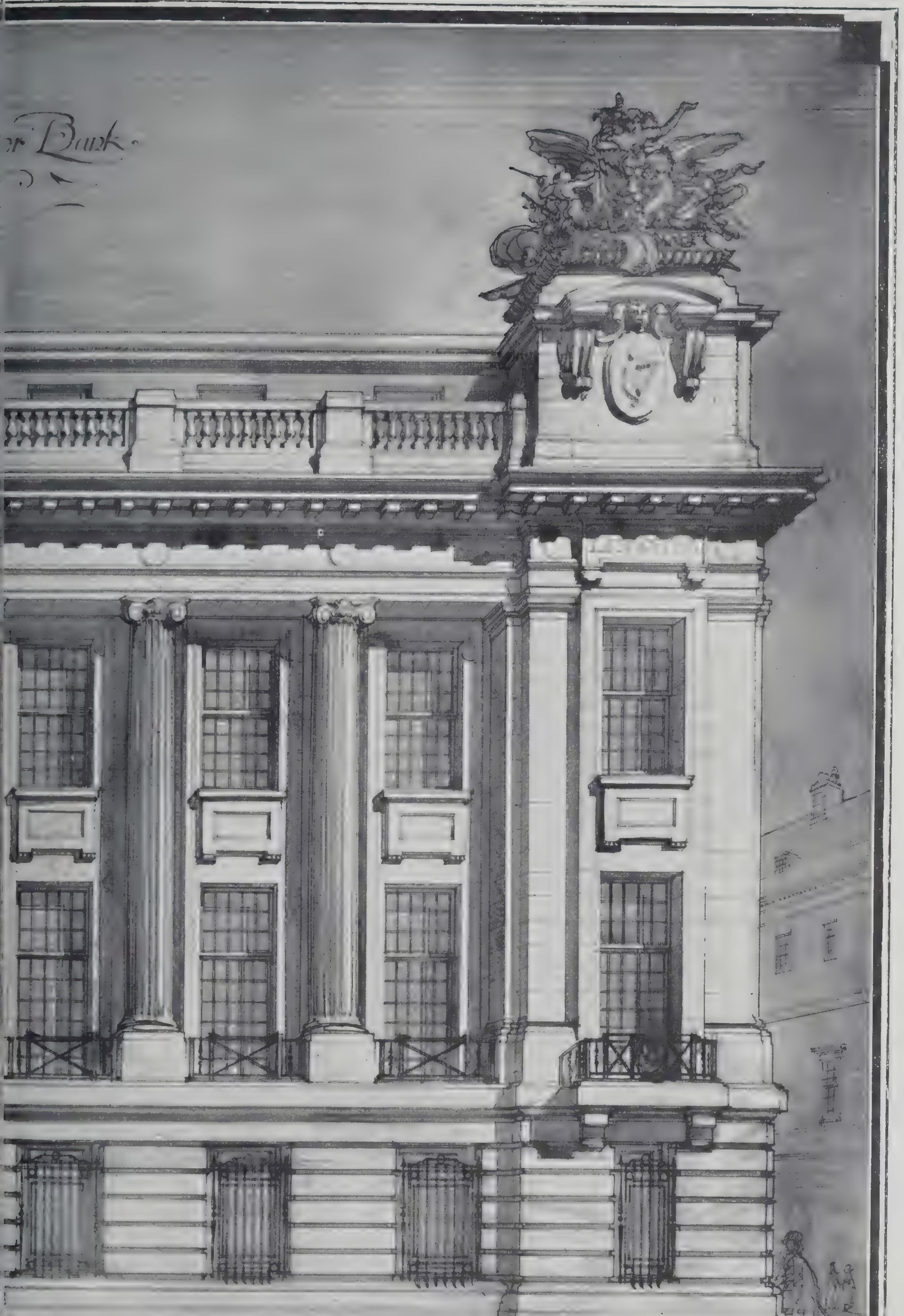
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, August 16th,* 1911.



NEW HEAD OFFICE OF THE MUNSTER AND LEINSTER BANK.

(R



RTHUR HILL, F.R.I.B.A., AND HENRY H. HILL, ARCHITECTS.

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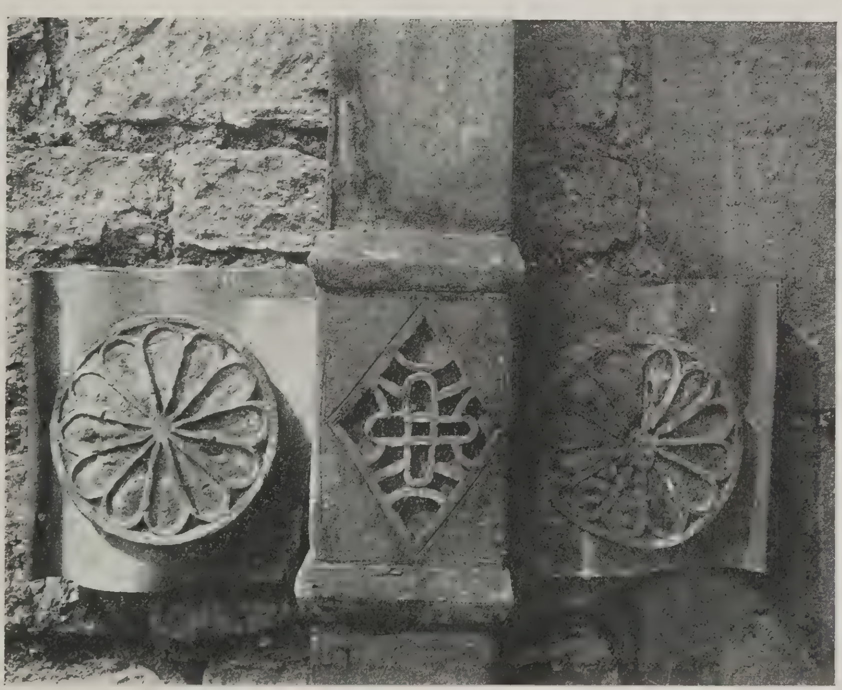
THE ARCHITECTS' &
BUILDERS' JOURNAL.

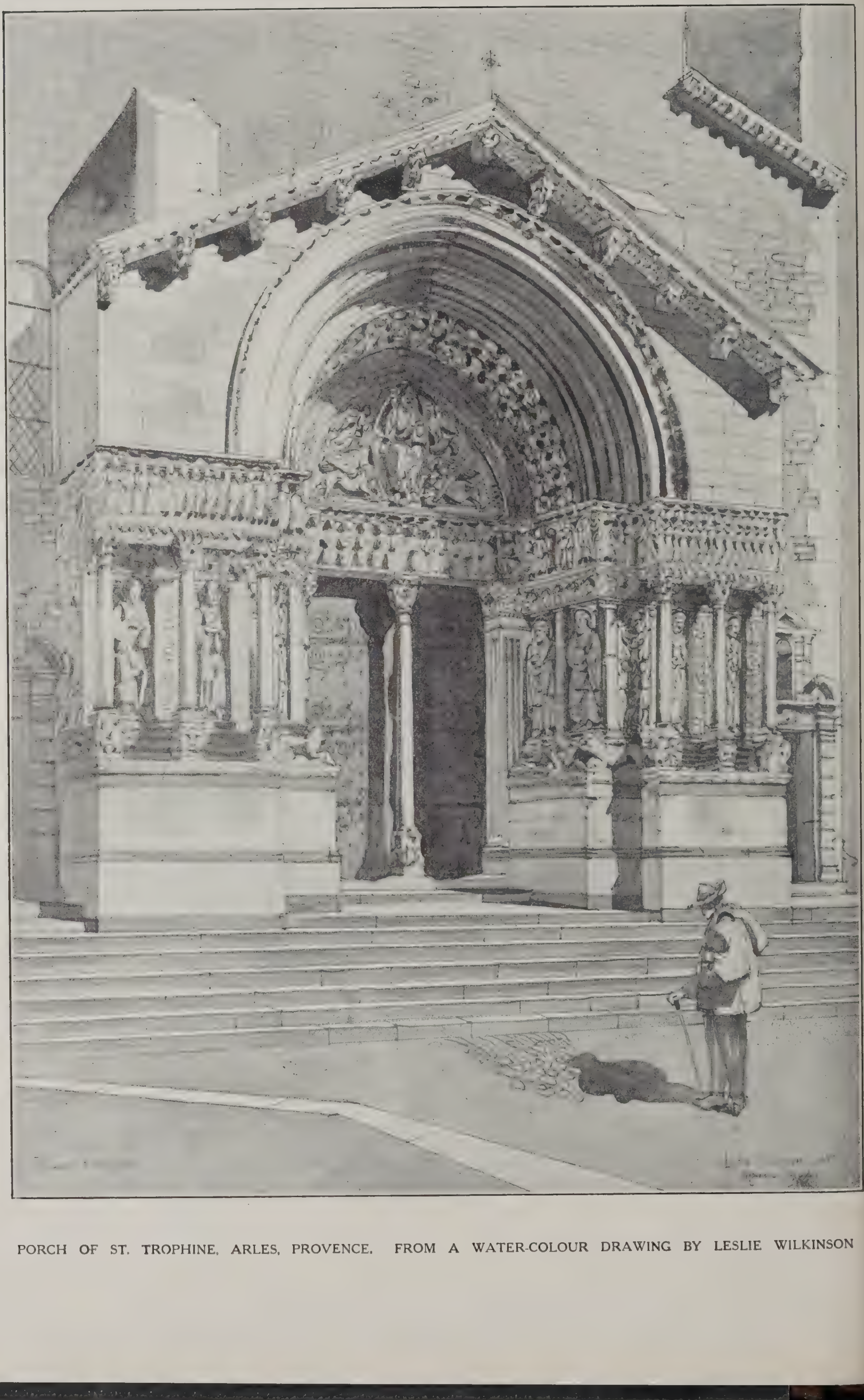
WEDNESDAY,
AUGUST 16th, 1911.

Volume XXXIV. No. 864.



English artificers in lead-work have never been excelled, and their loving and leisurely ornamentation of common objects, such as the pipe socket here shown, must excite the envy as well as the admiration of the art-craftsmen of these more hurried days.

SEVENTEENTH-CENTURY LEAD-WORK, HADDON HALL.



PORCH OF ST. TROPHINE, ARLES, PROVENCE. FROM A WATER-COLOUR DRAWING BY LESLIE WILKINSON

THE ARCHITECTS' & BUILDERS' JOURNAL.

AUGUST 16th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 864.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

The Architectural Association Curriculum.

THE annual circulation of the small brown covered pamphlet containing the curriculum of study in the Architectural Association School has just been effected, and invites some consideration on the value to the coming generation of English architects of the means thus placed at their disposal for acquiring knowledge necessary for the practice of an increasingly icult profession or art, whichever way we are regard it. Not that the art of architectural design, ely as design, is more difficult than at any former period, the practice of it has become more difficult in consequence he increasing demands for special and elaborate planning nodern buildings, and the necessity of dealing with various methods of construction which require special knowledge rder to develop them in a satisfactory manner into artistic n.

change has indeed come over the conditions of architec- l education since the time, which many can well remember, n it was considered sufficient to article a youth to an archi- in good practice and leave him to learn what he could of the office routine work. There were a few cases in e days when the principal thought himself under obliga- to devote some special attention to an articled pupil and give some instruction and advice beyond what he might ner for himself from assisting in the office work, but those s, we fear, were rather exceptional, perhaps almost un- dably so, as an architect in large practice could hardly time to give special instruction to pupils. Nor was the led pupil system always so deficient in results as might been expected; but it depended very much on the pupil self. A clever youth, with a real love for architecture a determination to get on, could learn a great deal from e practice, though not in a very systematic manner; some gs he would learn from it which no other experience could h him, but his knowledge of the history of architecture ld be very haphazard, and his idea as to architectural art ld probably mean adopting, consciously or unconsciously, style and manner of his principal.

oing into a working architect's office is, however, abso- y essential as a preparation for being an architect; we no belief whatever in studio-educated architects; they have a great deal of acquaintance with the art and the ice of building (which together constitute architecture), they will be out of touch with practical life in connection architecture, and no course in a studio will supply that iency. To be really an architect a man should have familiar with buildings in progress; gone up ladders, bricklaying and masonry in operation, been in direct nunication with the foremen and workmen (from whom is often much to be learned). Now the advantage of Architectural Association system is that it is planned to oine both studio work and office work; two years in the school first, to acquire a general knowledge of architecture construction preparatory to entering an office; and two years of evening school to be kept up along with the office work, so as to keep up the study of subjects which do not come within the category of office practice. The advantages of the two years' preliminary day school, which are much insisted on in the Association pamphlet (with which in this respect we are quite in agreement), are that the pupil comes to an office in a much better position to be useful there than if he knew nothing of the subject beforehand, and that the two years day school course gives him the opportunity to discover whether the subject of architecture really interests him or not, and gives the opportunity to his instructors to form an opinion as to his capabilities. This is a point most important both for the student and for parents and guardians. Too often has a youth, who thinks he "would like to be an architect," been articled under the old system of indentures binding for a term of years to find afterwards that he had little ability for the profession or no liking for it, that it was quite different in fact from what he had fancied it in theory. This evil would cure itself in the case of the Architectural Association schools, since it is a condition (emphasised in capitals) that "admission from one term to the next is dependent upon continuous improvement and hard work." Thus the unfit candidate for the profession would drop out in the natural order of things, before irrecoverable time had been wasted in finding out his unfitness.

These conditions ought to make the Architectural Association School an institution worth the serious attention of those responsible persons who are grouped under the conventional formula "parents and guardians." But there is one question which has been raised from time to time of late; what place should the history of past styles of architecture occupy in a system of instruction in architecture? This is an important question, because a great deal of criticism directed against modern architecture has taken the form of a complaint that the art has now become only a reproduction of styles of the past. That the existence of such a criticism is recognised by the framers of the Architectural Association seems to be implied by the rather interesting and certainly ingeniously worded note which follows the announcement of the heads of the history lectures on page 7 of the pamphlet. The following is the scheme of lectures on the Historical Development of Architecture for three terms:—

1st Term.—Early History of Architecture in Egypt, Greece, and Italy.

2nd Term.—Continuation of the subject with development of Byzantine from Roman work to Romanesque, and the commencement of Mediæval Architecture.

3rd Term.—Outline of Mediæval and Renaissance Architecture, with a sketch of the subsequent history of the art up to the present time.

Then there follows this general comment as to the object of such lectures:—

> The general aim of these lectures is to acquaint the student with the outlines of the growth and development of the various phases of historical architecture, and to show that while these have arisen mainly through constructional and actual necessities, modified by varying social conditions and the materials available, they have become distinct forces in the national and civic life. By analogy to draw attention to the broader aspects of modern architecture as a growing factor in the outward expression of national development above and beyond mere utilitarianism.

Reading between the lines, we can see that this is to some extent an apologetic comment, designed to indicate how the study of architectural history may have a practical application to modern architecture. This study of history seems to be rather emphasised by the announcement that the Association have secured the valuable services of Professor Beresford Pite as Director of Education, and that during the ensuing session he will take control of the evening school, giving special instruction in design, "and will deliver a complete course of lectures on Architectural History, which, with the constructional lectures, will be so systematised as to work in direct co-relation with the design studies in the schools." No one could do that better than Professor Pite, whose lectures will be sure to be worth hearing, from whatever point of view one regards the subject. But we do not quite understand in what manner lectures on the history of architecture are to be "in direct co-relation with the design studies."

Every architect should know the history of the central stream of architectural development from Egyptian through Greek, Roman, Byzantine, Romanesque, and Gothic, down to the Renaissance; though the architecture of the Renaissance is not a link in a continuous development as the others are. Extraneous styles, such as Assyrian and Hindu, may be neglected, except for those who for any reason find a special interest in them; they have nothing to do with the main current of architecture; and a great deal of Hindu architecture is merely barbaric, and has no influence beyond its own borders. Saracenic or Mahommedan architecture, too, whatever its beauty and importance in itself, has a place apart, and a development of its own, which hardly influenced the main stream of development. But the central styles mentioned, and their successive relation to one another, every architect must know, or he hardly knows where he is at the present moment; architecture is to a great extent a traditional art, and those central styles represent its tradition. But when we read of lectures on history being arranged "in direct co-relation with design studies," that looks as if the studies were to consist in designing in the various styles mentioned in the lectures; we cannot make out any other meaning for it. No doubt the knowledge of architectural history, besides defining the tradition, has the effect of filling the mind with ideas, and is in itself no bar to originality; in fact, in architecture as in literature, he who has the fullest knowledge of what already exists will be the most original; he will have a foundation to go upon, a position to start from. But if the sentence means that the faculty of design is to be exercised by designing successively in the styles successively lectured on, that is likely to have the mischievous result of encouraging students to think of architectural design as meaning designing in a certain historical style, a process which is archæological rather than architectural. No, we would say by all means instruct students in the history of architecture; that can do them no harm, and is a knowledge they ought to possess; but when it comes to designing, do not name a style; give them a church, a theatre, a house to design, with certain requisite conditions as to site available and accommodation required, and say to them—"Design a house or a church under those conditions; you have learned enough about architecture to know what architectural design means; make your design for that building according to your own lights." That would be a far more rational way of giving them practice in architectural design.

The Royal College of Art.

THE report of the Departmental Committee on the Royal College of Art, issued as a Blue Book on Friday last, does not encourage optimism either as to the utility of that institution or as to the progress in æsthetics that appears to have been sometimes unwarrantably assumed for this country. The College was founded in 1837 for encouraging
the study of art in relation to industry and manufactures; a
in 1901 it was divided into four schools, dealing respectiv
with architecture, ornament and design, decorative painti
and sculpture and modelling. A noteworthy provision is t
each student on entering the College takes a prelimin
course in architecture, unless already qualified in that subje
with a view to impressing upon him the unity of the arts
their decorative aspect. It is a fine tribute to the Mistr
Art, but to many may possibly be as a stone of stumbling,
not a rock of offence. For the right stamp of student, capa
of being impressed by the unity of the arts, seems hard
come by. That appears to be the crux of the problem, a
the chief reason why the enquiry was held. It is more s
than surprising to read that "it had been impressed upon
committee from every side that in far too many cases t
(the students) reach the college lamentably deficient in gene
education." In this respect, unfortunately, the experie
is not peculiar. The R.I.B.A. Board of Education, to s
nothing of the City and Guilds Institute, must by this ti
be thoroughly tired of telling the same dismal tale of frequ
illiteracy. Equally disheartening is it to read that "design
who have passed through the college are not eagerly snap
up by business men," and that wall-paper manufactur
"prefer German designs for technical adaptability, Fre

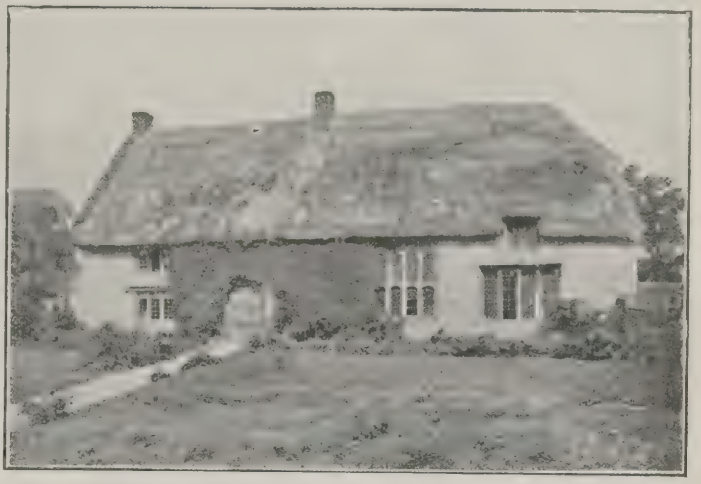
BYFIELD, NORTHANTS. DRAWN BY ALAN L. SNOW.

gns for artistic skill.'' Again "of the firms which ploy regular designers, some train them in their own draw- offices, others find a supply in the local schools of art. few of them ever think of looking to the Royal College, although some who have tried the experiment have been uid, we find the opinion widely held that the type of gner turned out by the College is, from the manufacturing lpoint, 'unemployable.' '' This attitude on the part of ufacturers is doubtless in some degree due to their own rance, conservatism, and prejudice; for it is recorded in the rt that "Professor Lethaby, when we questioned him upon attitude, was disposed to admit its prevalence, to ascribe part to a failure on the part of manufacturers to realise the former 'South Kensington tradition' is now a thing he past, and to claim that the College really has some- g to offer the manufacturers, which they lose by declining nploy its students.'' The committee suggest, as a remedy, decentralisation of the training, which should be conducted he actual districts where it can be applied, "and where e the necessary equipment can, without unreasonable ex- se, be made available.'' They further recommend "that ersities should be encouraged to provide suitable degree ses for intending artists, architects, and teachers of art,'' ch advice may imply something of wisdom, but suggests e of vanity; although it is quite possible that graduation ht serve the useful purpose of helping in the elimination he unfit.

The National Trust.

HE annual report of the "National Trust for Places of Historic Interest or Natural Beauty'' shows what invaluable work this Society, founded sixteen years ago, oing in securing for the public the enjoyment in perpetuity eautiful sites which would otherwise be built over or other- spoiled. Among other things mentioned in the report, have raised money to secure Grange Fell, and the Borrow- Birches, an important addition to the land they had dy secured around Derwentwater. Besides raising ls for this and similar purchases, the prestige of the Trust induced the owners of important sites to make them over he Trust to hold on behalf of the public. We learn instance that Mr. and Mrs. Arthur Lee, the owners of be Hill, Buckinghamshire, one of the most prominent s of the Chilterns, have made over this hill to the Trust nsure its being kept for ever as open ground, having pur- ed it with this object. Thus the influence of the Trust up deeds of public generosity in others. The Trust are anxious to secure an open space on Colley Hill, Reigate, invite subscriptions for that purpose. Buildings of rest, as well as open spaces, are among the objects of the st's operations; and in the present report there is a photo- h of a charming old house, the old Priest's house at helney, Somerset, which has been preserved. We quote rtion of the report referring to this:—

> "The Priest's House has not been occupied as a residence any incumbent for many generations, though it continues be the only Vicarage or Glebe House in the Parish. The use was recently in a dilapidated condition; indeed, within e last year a part of the back wall has fallen. It was there- re urgently necessary to take steps to preserve the building. wing perhaps to it not having been the residence of recent cars, the house has come down to us in an untouched con- tion, and is consequently a building of great architectural d antiquarian interest, and eminently worthy of preserva- n. Any repairs which the ecclesiastical authorities could ve undertaken would have been directed to making the use fulfil the purpose of a modern vicarage. This would ve been detrimental, if not fatal, to its architectural interest; gotiations were accordingly opened on the initiative of the car, the Rev. Joseph Stubbs, between the authorities and e National Trust. The result of these negotiations is that e Trust has now an opportunity of purchasing the house, d has meanwhile, with the aid of the Society for the rotection of Ancient Buildings, undertaken the repairs which are immediately required to keep the building from further decay.''



THE OLD PRIEST'S HOUSE, MUCHELNEY, SOMERSET.

Any of our readers who wish to support so excellent an institution as the National Trust, or to acquire more information in regard to its working, should address the Secretary, Mr. Nigel Bond, at 25, Victoria Street, Westminster.

The Porch of St. Trophine, Arles.

(See Frontispiece.)

THE porch of St. Trophine, at Arles, in Provence, perhaps one of the most interesting examples of French Romanesque architecture, was built in the eleventh century, and possesses a wealth of fine sculpture. In the tympanum is represented the enthroned Christ with the symbols of the Evangelists on either side. The main member of the pointed arch is adorned by a choir of angels. On the frieze is illustrated the procession to the Last Judgment, the lost souls being dragged towards a dragon with gaping jaws. In the arches between the detached columns are placed statues of the Apostles. The whole composition bears a striking resemblance to what is known as the *motif-Palladio;* but its chief distinction is the carving, which is wonderfully effective.

The Shakespeare Memorial for Southwark Cathedral.

A GENEROUS donation of £400 from Mr. Sanford Saltus, of New York, has enabled the committee to put in hand the structural and architectural portions of the Shakespeare Memorial in Southwark Cathedral. This church is undoubtedly a most appropriate place for such a memorial. Shakespeare must have known it well. Formerly the church of the Priory of St. Mary Overy, it became the parish church of St. Saviour, Southwark, in 1540. Its choir and transepts and Lady Chapel, which are all that remain of the old church, are esteemed as showing, after Westminster Abbey, the finest Early English work in London. Nearly opposite, on the other side of the river, where now stands the huge brewery which Dr. Johnson sold for the Thrales, recommending it as possessing "the potentiality of riches beyond the dreams of avarice,'' was the Globe Theatre, of which Shakespeare, with the Burbages and others, was joint proprietor. His youngest brother, Edmund Shakespeare, player, was buried there, and so also was one of Shakespeare's partners, Lawrence Fletcher. Philip Henslowe, too, a rival Bankside manager, whose diary tells us almost all we know —and not much at that—of theatrical conditions in his day, was buried in the chancel in 1615-16. Philip Massinger was interred there in 1638-9, and John Fletcher, the dramatist, had been buried in the church in 1625. That hitherto Shakespeare should have had no memorial there seems, in the light of these associations, to be a rather astonishing omission, which we hope to see worthily repaired.

Gresham College to be Rebuilt.

ALL the difficulties in the way of rebuilding Gresham College upon an enlarged site have now been overcome. The Gresham Committee, representing on its two sides the respective interests of the Corporation and the Mercers' Company, has obtained possession of the property adjoining the present College. The area of the additional site is 1,220 sq. ft., or rather more than half the area of the land upon which Gresham College now stands. Under the option given to the Corporation and the Mercers' Company early in the year, the price to be paid to the freeholder was £19,100, to the leaseholder £520, and to the under-lessee £1,200, the whole making a total of £20,820. It is upon that basis, the "City Press" understands, that the purchase has been completed. Plans and drawings for rebuilding Gresham College upon the enlarged site are being prepared by Mr. Dendy Sadler, Surveyor to the Gresham Committee, and Mr. Sydney Perks, City Surveyor. A contract for pulling down the old building at the corner of Gresham Street and Basinghall Street, and laying the foundations of the proposed new building, will be drawn up, and operations consequent thereon commenced forthwith. It is hoped that the completion of the new building may be followed by a considerable development of Sir Thomas Gresham's Educational Trust. This, indeed, appears to be a matter that should be settled before the plans are prepared. The idea of first completing the building and deciding upon its uses afterwards seems to be an inversion of the true order.

London's King Edward Memorial.

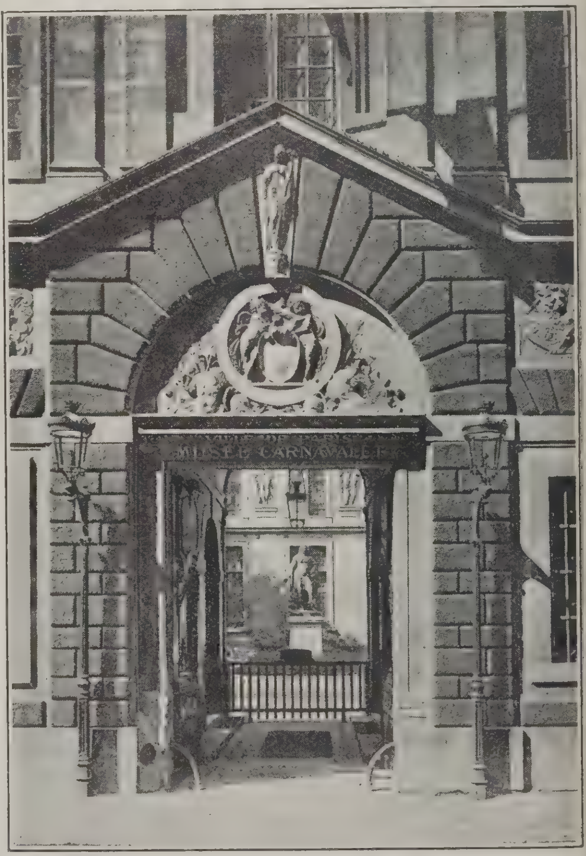
IN the House of Commons, recently, Mr. Noel Buxton asked Mr. Dudley Ward, as representing the First Commissioner of Works, whether any recognised authority on town-planning or civic design had been consulted by the King Edward Memorial Committee in order to do justice to the architectural and other æsthetic opportunities of London. Mr. Dudley Ward replied that although the Committee did not consult any individual, a number of suggestions were brought before them by gentlemen well qualified to advise in such matters. The Committee, he said, have entrusted the work to Mr. Lutyens and Mr. Mackennal, whose plans will in due course be placed before Parliament. Mr. Noel Buxton inquired whether the First Commissioner of Works would lay before the Committee the plan for improving Hyde Park Corner prepared by Mr. Adshead, Professor of Civic Design, with a view to providing an adequate memorial to King Edward. Mr. Dudley Ward replied that the First Commissioner will be happy to do that. The reply to Mr. Buxton's first question emphasises a plea that one is almost tired of reiterating: that in matters of æsthetic moment we ought not to be content to muddle along anyhow. Nor does the answer to the second enquiry give much better assurance that the Government realises its responsibilities in the matter. It may perhaps be counted for righteousness that they are willing to receive advice when they cannot decently decline it; but, all the same, they ought not to wait until it chances to come to them, but rather to seek it out diligently in every likely quarter.

New Underground Railway for New York.

WHAT will probably be the most extensive work ever undertaken to provide a city with transit facilities was begun recently, when the first spadeful of earth was excavated in Lexington Avenue, Sixty-Seventh-Street, for New York's new underground railway system. The cost of this huge enterprise will exceed £40,000,000, and will include the laying of 140 miles of metals. It is estimated that the entire system will be in full working within five years. The New York Municipality will dig the tunnels and private companies will probably rent them. The tunnels will have four sets of metals, permitting expresses to run at the rate of thirty miles an hour throughout the day. The new system will relieve the terrible congestion of traffic to which the people o New York have been subjected for so many years during th morning and evening "rush" hours. The city has grow faster than new traffic lines could be constructed to handle th population, but the new subways with their 140 miles of line are expected adequately to accommodate the municipality fo many years to come.

Bristol Building Trades Dispute.

ON the 1st January last all branches of the building trade operatives in Bristol, with the exception of the masons, served notices for an advance in wages of a penny per hour, and the Mason's Society gave notice for a reduction in the hours of labour during the summer of one hour per day, their idea being to spread the work over a greater number of men and so provide work for some of the unemployed. The matter having been referred to the Board of Trade to appoint an arbitrator, the Board appointed Mr. A. E. Hudson, who sat at the offices of the Bristol Master Builders' Association, at the Guildhall, on the 31st July and the 1st August. The hearing occupied two days, and Mr. Hudson's award has now been received. With regard to the carpenters and joiners and bricklayers, he decides that there shall be no advance in pay, and in the case of the masons his award provides "that there shall be no reduction inthe working hours unless the masons' labourers affected are willing that the reduction shall be made. in which case the reduction shall be three hours per week during the summer for masons working on the bench or in the shop, and a corresponding reduction in the hours of labourers attending on such masons, such reduction in such case to be effected by altering the starting time from 6 a.m. to 6.30 a.m in the summer months." The cases of the plasterers plumbers, painters, and labourers are not covered by the award.



The Musee Carnavalet, one of the most charming of the many notable buildings of Paris, is the work of many hands, including Pierre Lescot and Jean Bullant, with the sculptor Jean Goujon, then Du Cerceau, and finally Francois Mansart, who added most of the facade to the Rue de Sevigne.

CARNAVALET MUSEUM, PARIS: PRINCIPAL ENTRANCE

HE ELIZABETHAN PLAYHOUSE.

MR. BRANDER MATTHEWS, the American dramatic critic and Shakespearian scholar, has been so fortunate as to acquire, for Columbia University, where is Professor of Dramatic Literature, an exceedingly resting model of the Fortune Theatre, which has been de by Mr. James P. Maginnis, A.M.I.C.E., from a plan pared by Mr. W. H. Godfrey, architect, and Mr. William her, the data for which have been obtained from Alleyn's cifications, which are preserved in Dulwich College.

t was Mr. William Archer who brought to the notice of . Godfrey the original contract, dated 1599-1600, for the lding of the Fortune Theatre, and the latter gentleman te, in the "Architectural Review" of April, 1908, the unt from which the following notes are largely drawn.

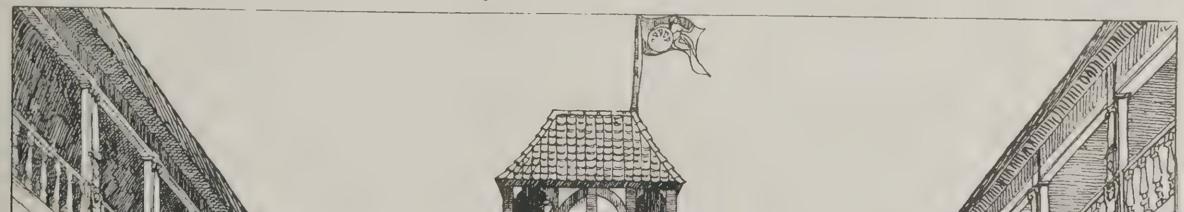
part from its interest to architects of the present day, as strative of building methods of more than 300 years ago, contract has considerable value for the light it throws the highly controversial subject of the form of the zabethan stage. Mr. Godfrey does not discuss in detail of the theories that had been advanced, but contents self with printing just sufficient of the available data to ble the architectural reader to understand the reconstruc- of the Fortune Theatre, which is shown in the accompany- illustrations.

he sources from which these data are drawn are of two sses—(1) the internal evidence which the plays of the iod afford in their text and more abundantly in their stage ections; and (2) the contemporary evidence of descriptions drawings made while the theatres still existed, of which most important are the Fortune and Hope contracts, the ly maps, and the remarkable drawing reproduced here of interior of the Swan Theatre, as preserved in the common- ace book of one Van Buchell, in the Utrecht University Library, and purporting to be drawn from a sketch by a traveller named Johannes de Witt, who visited London about 1600.

In Visscher's fine drawing of London in the year 1616 there are in the foreground, on the south side of the Thames, three buildings resembling amphitheatres in form, marked respectively (reading from east to west) the Globe, the Bear Garden, and the Swan. The Bear Garden was pulled down in 1613, and the Hope Theatre erected "neere or uppon the saide place where the same game place [the Bear Garden] did heretofore stande." While the correctness of the two former inscriptions may very reasonably be questioned, Mr. Godfrey sees no ground for doubting the veracity of the drawing, since two theatres existed on Bankside in 1616—the Rose (1592) and the Hope (1613), besides the more celebrated Globe, which lay probably beyond the limit of the map. The Swan is correctly placed, as we know by its position in Paris Garden. But, whether depicted or not, the Globe Theatre of 1616 could not be Shakespeare's Globe, which was erected in 1598-9, and burnt down in 1613; and it is important to bear this in mind in considering the Fortune contract, which definitely states that the new theatre is to follow the pattern of the "late erected plaie-house on the Banck . . . called the Globe."

The Fortune document itself consists of rather more than a mere contract, and possesses somewhat of the character of a specification, being not unlike the hasty compromise between the two that is not unknown even in our own day. The portion which bears on the actual form of the building reads as follows:—

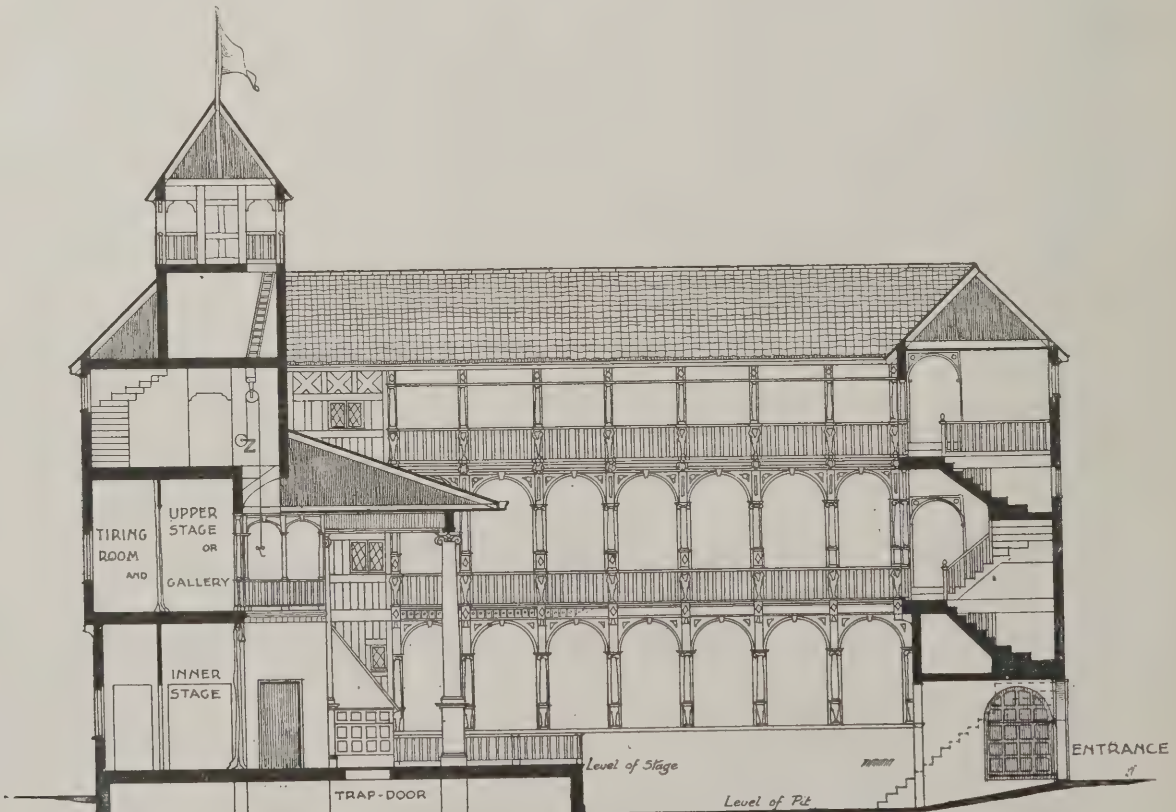
> This Indenture made the eighte daie of Januarye 1599, and in the twoe and fortyth yeare of the reigne of our soverigne ladie Elizabeth, by the grace of God Queene of England, Fraunce, and Irelande, defender of the faythe, etc., betwene Phillipp Henslowe and Edward Allen of the parishe of Sainte Saviours in Southwark, in the county of Surrey, gentlemen, on th' one parte, and



THE FORTUNE THEATRE. DESIGNED (IN ACCORDANCE WITH AVAILABLE DATA) BY WALTER H. GODFREY.

Peeter Streete cittizein and carpenter of London on th' other parte.—Witnesseth that, whereas the saide Phillipp Henslowe and Edward Allen the daie of the date hereof have bargayned, compounded and agreed with the saide Peter Streete for the erectinge, buildinge, and settinge upp of a newe howse and stadge for a plaie-howse, in and uppon a certeine plott or parcell of grounde appoynted oute for that purpose, Scytuate and beinge nere Goldinge Lane in the parishe of Sainte Giles withoute Cripplegate of London; to be by him the saide Peeter Streete, or some other sufficyent woorkmen of his provideinge and appoyntemente, and att his propper costes and chardges, for the consideracion hereafter in theis presentes expressed, made, erected, builded, and sett upp in manner and forme followeinge; that is to saie, the frame of the saide howse to be sett square, and to containe fower-score foote of lawfull assize everye waie square withoute, and fiftie-five foote of like assize square everye waie within, with a good suer and stronge foundacion of pyles, bricke, lyme, and sand, bothe withoute and within, to be wroughte one foote of assize att the leiste above the grounde; and the said frame to conteine three stories in heighth, the first or lower storie to conteine twelve foote of lawfull assize in heighth, and the seconde storie eleaven foote of lawfull assize in heighth, and the third or upper storie to contein nyne foote of lawfull assize in heighth. All which stories shall conteine twelve foote and a half of lawfull assize in breadth throughoute, besides a juttey forwardes in eyther of the saide twoe upper stories of tenne ynches of lawfull assize; with fower convenient divisions for gentlemens roomes, and other sufficient and convenient divisions for twoepennie rooms; with necessarie seates to be placed and sett as well in those roomes as througheoute all the rest of the galleries of the saide howse; and with suche like steares, conveyances, and divisions, withoute and within, as are made and contryved in and to the late erected plaie-howse on the Banck, in the saide parishe of Sainte Saviours, called the Globe; with a stadge and tyreinge-howse to be made, erected, and sett upp within the saide frame; with a shadowe or cover over the saide stadge; which stadge shal be placed and sett, as alsoe the stearecases of the saide frame, in suche sortt as is prefigured in a plott thereof drawen; and which stadge shall conteine in length fortie and three foote of lawfull assize, and in breadth to extende to the middle of the yarde of the saide howse; the same stadge to be paled in belowe with good stronge and sufficyent newe oken bourdes, and likewise the lower storie of the saide frame withinside, and the same lower storie to be alsoe laide over and fenced with stronge yron pykes; and the saide stadge to be in all other proporcions contryved and fashioned like unto the stadge of the saide plaiehowse called the Globe; with convenient windowes and lightes glazed to the said tyreing-howse. And the saide frame, stadge, and stearecases to be covered with tyle, and to have sufficient gutter of lead, to carrie and convey the wate frome the coveringe of the saide stadge, to fall backwardes. An alsoe all the saide frame and the staircases thereof to b sufficyently enclosed withoute with lathe, lyme, and haire. An the gentlemens roomes and twoepennie roomes to be seeled wit lathe, lyme, and haire; and all the flowers of the saide galleries stories and stadge to be bourded with good and sufficyent new deale bourdes of the whole thickness, wheare neede shal be. An the saide howse and other thinges before mencioned to be mad and doen, to be in all other contrivitions, conveyances, fashions thinge and thinges, effected, finished and doen, acordinge to th manner and fashion of the saide howse called the Globe; saveing only that all the principall and maine postes of the said frame and stadge forwarde, shal be square and wroughte palaster-wise with carved proporcions called satiers to be placed and sett on th topp of every of the same postes; and saveinge alsoe that th saide Peter Streete shall not be chardged with anie manner paynteinge in or aboute the saide frame, howse, or stadge, or ani parte thereof, nor rendringe the walls within, nor seelinge ani more or other roomes than the gentlemens roomes, twoepenni roomes and stadge, before remembred. Nowe theere uppon th saide Peeter Streete doth covenante, promise and graunte f himself, his executors and administrators, to and with the sai Phillipp Henslowe and Edward Allen and either of them, an the 'xecutors and administrators of them, and either of ther by theis presentes, in manner and forme followeinge, that is t saie; that he the said Peeter Streete, his executors or assigne shall and will, at his or their owen propper costes and chardge well, woorkmanlike and substancyallie make, erect, sett upp an fully finishe in and by all thinges, accordinge to the true meaning of theis presentes with good, strong and substancyall new tymber and other necessarie stuff, all the saide frame and othe woorkes whatsoever in and uppon the saide plott or parcell grounde, beinge not by anie aucthoretie restrayned, and haveing ingres, egres and regres to doe the same, before the fyve an twentieth daie of Julie next commeing after the date hereof and shall alsoe, att his or theire like costes and chardges, provi and finde all manner of woorkemen, tymber, joystes, rafter boordes, dores, boltes, hinges, brick, tyle, lathe, lyme, hair sande, nailes, leede, iron, glasse, workmanshipp, and oth thinges whatsoever, which shal be needeful, convenyent an necessarie for the saide frame and woorkes and everie par thereof; and shall alsoe make all the said frame in every poyn for scantlinges lardger and bigger in assize than the scantling of the timber of the saide newe erected howse called the Glob

The remainder of the document sets forth the conditio under which the contractor is to be paid £440, the total co



THE FORTUNE THEATRE: SECTION

the works. In the absence of the plan, we are fortunate having the main dimensions laid down for us so precisely. e Hope contract omits all dimensions. The theatre was to built on the model of the Swan. Beyond the main dimen-ns of height and area for the Fortune, there is really little lication of the arrangement of the stage, or the disposition the main features of the Theatre. It is necessary, there-re, to draw inferences from other sources, and see that their plication does not clash with the terms of the specification.

The prototype of the Elizabethan public theatres was the d galleried inn-yard, in which the strollers first gave their rformances, but the Fortune was probably the only theatre t was square in plan like the inns. With the help of their alogy, Mr. Godfrey was able to construct the frame itself irly safely, with its three tiers of open galleries supported, vards the yard, by posts wrought pilasterwise, adorned with rved satyrs.

Various documents make it almost certain that the main dy of the public entered at one door into the yard, each rson making the same payment, and that those who wished uld then proceed to the galleries, where an extra sum was acted from them by the "gatherers." There was one other or—the tyring-house or stage door.

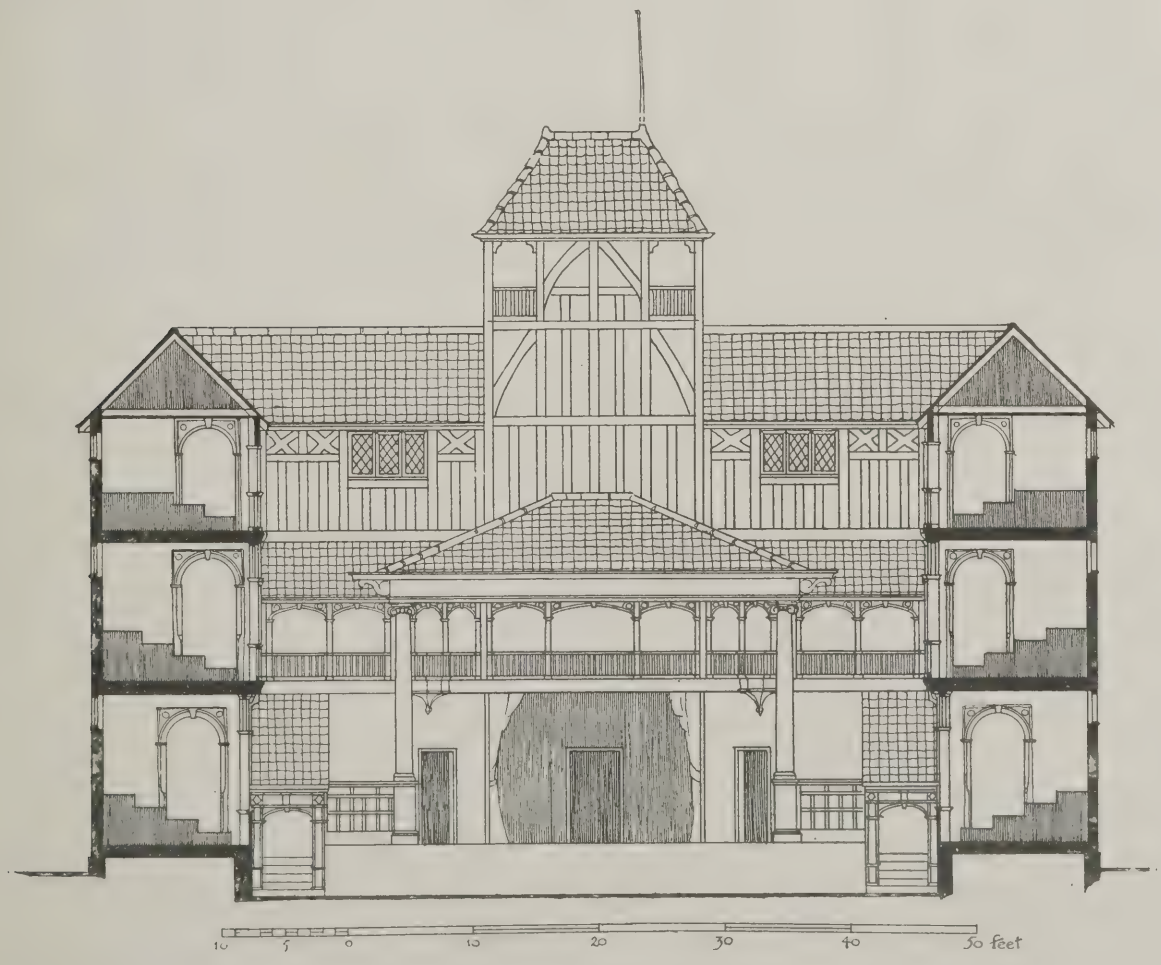
There is some difficulty about the staircases. It is clear om the Fortune contract that some of these were in the rd, since their roofs are distinctly specified, but their sition is conjectural. Mr. Godfrey is inclined to think that ey would be circular stairs placed in the angles of the yard arest the entrance; but in the accompanying plan they are own on each side of the stage, thus making use of a space r which any other purpose is not easily conceived, and viating the obstruction of view which the first-named posi-ns would entail. Upon this question the Swan drawing does t throw much light.

The stage itself, its shadow or roof, and the buildings hind, afford a problem which is far from having been as yet finally solved. In the drawings, Mr. Godfrey has followed Mr. Archer's views.

The contract specifies that the stage is to be 43ft. wide and to extend to the centre of the yard; it also definitely mentions the "shadowe or cover," which is to be tiled, and provided with a lead gutter brought back to the rear of the stage. This latter direction points to a roof similar to that shown in the Swan drawing, and it is reasonable to suppose that in like manner it was supported by independent columns. The lords' boxes or minstrels' gallery, in the centre of which is the upper stage, follows Van Buchell's sketch, which is corroborated by such stage directions as that in Marston's "Antonio's Revenge," "while the measure is dancing, Andrugio's ghost is placed betwixt the music-houses." This upper stage fulfilled such separate functions of Juliet's balcony, Christopher Sly's point of vantage, or the battlements of Angiers in "King John." In the Swan theatre there is no sign of an inner or rear stage beneath this gallery; but Mr. Archer thinks that Dr. Wegener is right in assuming its existence.

The remaining arrangements are more or less a matter of detail; the canted side walls, the railing to stage, the planning of tiring rooms, must be largely conjectural. But the timber turret from which the trumpeter gave the signal to the people without that the play was about to commence is indubitable.

It is upon these lines that the model has been constructed by Mr. Maginnis, with the advice and assistance of Mr. Godfrey and Mr. Archer. It looks very convincing, and has been executed with minute care and fidelity in every detail. We are sorry that it is to leave the country; but perhaps a replica could be secured for the new Shakespeare Memorial Theatre, or for the Museum at Stratford-on-Avon. In either or both places it would be an educational object of surpassing interest; for it is the only model in existence giving a clear idea of what the earliest playhouses were like, and is invaluable, enabling us to trace the evolution of modern theatre design.



THE FORTUNE THEATRE. SECTION.

MAGAZINES AND REVIEWS.

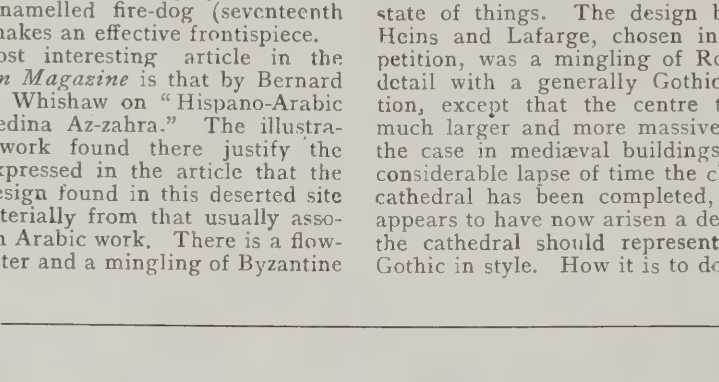
In the *Art Journal* Mr. Jourdain continues the subject of Holkham in his "Interiors of English Mansions." The illustration of the interior of the Great Hall gives a good idea of the classic dignity of this great mansion. The writer speaks with great admiration of the plaster details of ceilings and entablatures, all executed by "the ingenious Mr. Thomas Clark, of Westminster," who "with great accuracy followed the antique manner." Two of the fine fireplaces are illustrated, with overmantel designs rising to the cornice of the room. "Tapestry weaving in England" and "Incised Lacquer Screens" (Chinese work) are the subjects of two other articles, and another is devoted to "The Kent Furniture at Devonshire House," i.e., furniture designed by Kent, the architect. Mr. Lenygon, the writer of the article, thinks that Kent has been most incorrectly judged by posterity; but we do not exactly see in what sense Kent was misjudged except that he seems to have held a much more important place in the estimation of his contemporaries (the Earl of Burlington among others) than is generally realised. The illustrations of his furniture design are more remarkable for exuberance than good taste. A coloured print of a highly elaborated English enamelled fire-dog (seventeenth century) makes an effective frontispiece.

The most interesting article in the *Burlington Magazine* is that by Bernard and Ellen Whishaw on "Hispano-Arabic Art at Medina Az-zahra." The illustrations of work found there justify the opinion expressed in the article that the class of design found in this deserted site differs materially from that usually associated with Arabic work. There is a flowing character and a mingling of Byzantine element in the decorative carvings illustrated which gives them a character of their own. We must refer the reader to the article for the reasons suggested, at considerable length, to account for this special artistic character. The main idea is that it originated in the presence in Seville, under Abderrahman III., of a considerable number of Coptic artists, who brought their own artistic tendencies with them from Egypt. The Spanish Government, we are glad to learn, is now interfering to secure that the excavations shall in future be carefully conducted, and everything of interest saved for preservation in the Cordova museum. The leading article is, as usual in this magazine, a general attack upon anything and everything in connection with contemporary art in England, including a very unfair depreciation of Mr. Mackennal as a sculptor chosen for the Edward VII. memorial That Mr. Mackennal's stamp designs are not a success is quite true, but that only illustrates the fact that decorative design is one thing and sculpture another. The Edward VII. memorial is a question of sculpture, and Mr. MacKennal has proved himself to be one of the best English sculptors of the day.

The *Architectural Record* (New York) contains an article on the New York Cathedral which reveals a rather curious state of things. The design by Messrs. Heins and Lafarge, chosen in the competition, was a mingling of Romanesque detail with a generally Gothic composition, except that the centre tower was much larger and more massive than was the case in mediæval buildings. After a considerable lapse of time the choir of the cathedral has been completed, but there appears to have now arisen a demand that the cathedral should represent Anglican Gothic in style. How it is to do this now, unless the recently completed choir is
be demolished, it is not easy to unde
stand; nor can one see any reason why
cathedral erected in New York shou
follow the lines of English Gothic. V
should have preferred the design of Mess
Potter and Robertson, with four towe
at the four angles of the crossing, and
very fine treatment of the west front wi
three great arches (the four designs are
reproduced to a small scale in the *Reco*
article); it is in purer taste than t
accepted design; but the latter bei
already partly built, it is obviously t
late—it is even absurd—to talk now
carrying out the remainder of the buil
ing in a different style of Gothic. Pa
II. of an article on "Architectural Tre
ment of Concrete Structures," by M
M. M. Sloan, deals mainly with the su
face treatment of concrete, with phot
graphs of surfaces treated by differe
methods, which afford very good grou
for comparison. This, of course, is
question of texture only. The inserti
of tiles for obtaining colour is touch
upon, and seems to have been carried o
with some effect in the Marlborough-Ble
heim Hotel at Atlantic City, as far as o
can judge from a monochrome illustr
tion; at all events the building succeeds
being agreeable and effective as an arch
tectural composition.

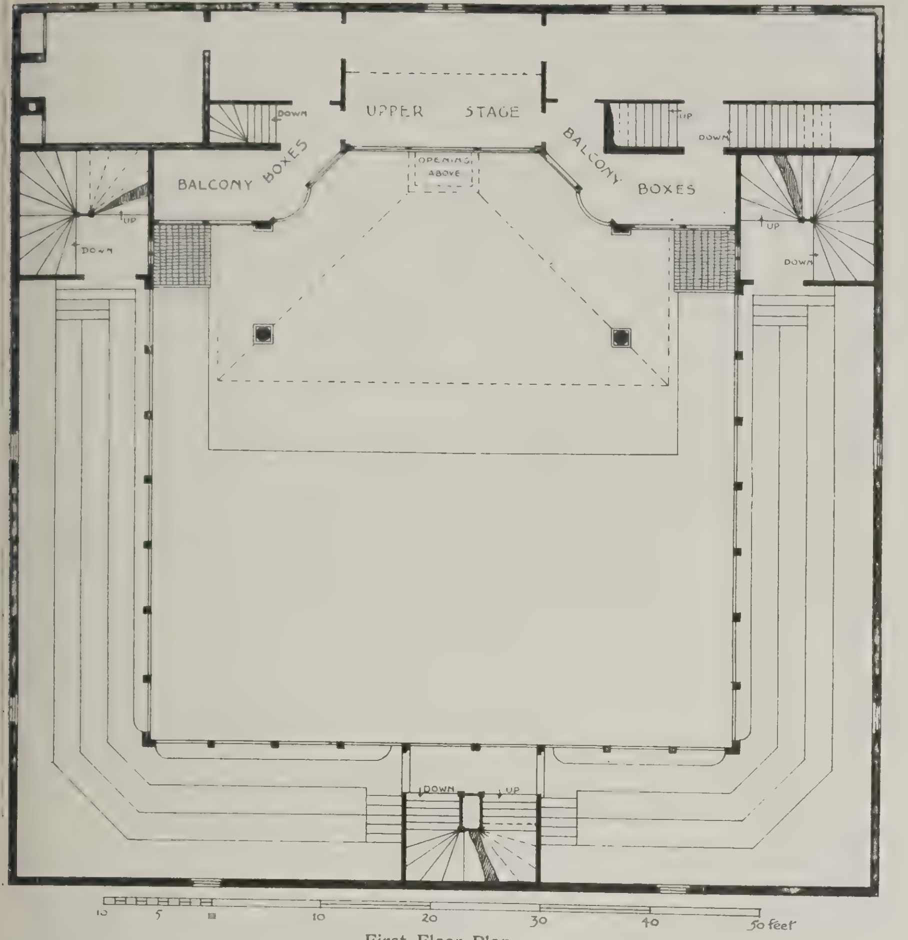
The *Quarterly Review* contains t
somewhat unusual feature of an article
architecture—"Gothic and Renaissan
Architecture"—signed by Mr. W.
Waters, who has been known hitherto
a translator of several series of Italia
romances, and whom we were hardly pr
pared to meet with as an authority
architecture. The article is, of cours
ostensibly a review of some recent worl
on architecture, three of them by arch
tects. It must be admitted, however, th
generally speaking, Mr. Waters writes
the subject with good sense and judgmen
and we may concur in most of the opinio
expressed, considering that in fact the
are merely the expression of what is no
generally received by all who have give
any thought to the subject of architectur
The remarks about the history of th
arch, however, show very little acquain
ance with the subject, and the remark th
'it may be assumed, on account of i
general diffusion, that the pointed ar
came into general use through its stru
tural merits" is rather amusing, conside
ing that the whole origin of the pointe
arch in European architecture was stru
tural, a fact long familiar to every arch
tect; and that, so far from its importan
having been exaggerated, the simple fa
is that its use alone made Gothic vaultin
a possibility. Why and how this was M
Waters does not seem to understand e
actly; at all events, he says nothing abo
it.

We are glad to see in the *Edinburg*
a kind of vindication of Haydon th
painter, though under the rather disagre
able and unsuitable title of "The Cockne
Raphael"; unsuitable, because no ma
living in London was ever less of
Cockney than Haydon. The article, how
ever, does justice to Haydon's evidentl
remarkable intellectual gifts, which gaine
him the friendship of Wordsworth an
others of the best minds of his day, an
suggests that he was of more importan
as a painter than is at present suppose
There is no doubt that Haydon was
splendid and most learned draughtsma
of the figure, and knew more about it tha
any other man of his day; it was mainl
through his influence that the importan
of the Elgin marbles was realised, an
that they were secured for the nation. H



THE SWAN THEATRE, BANKSIDE.

(See "The Elizabethan Playhouse," page 167.)



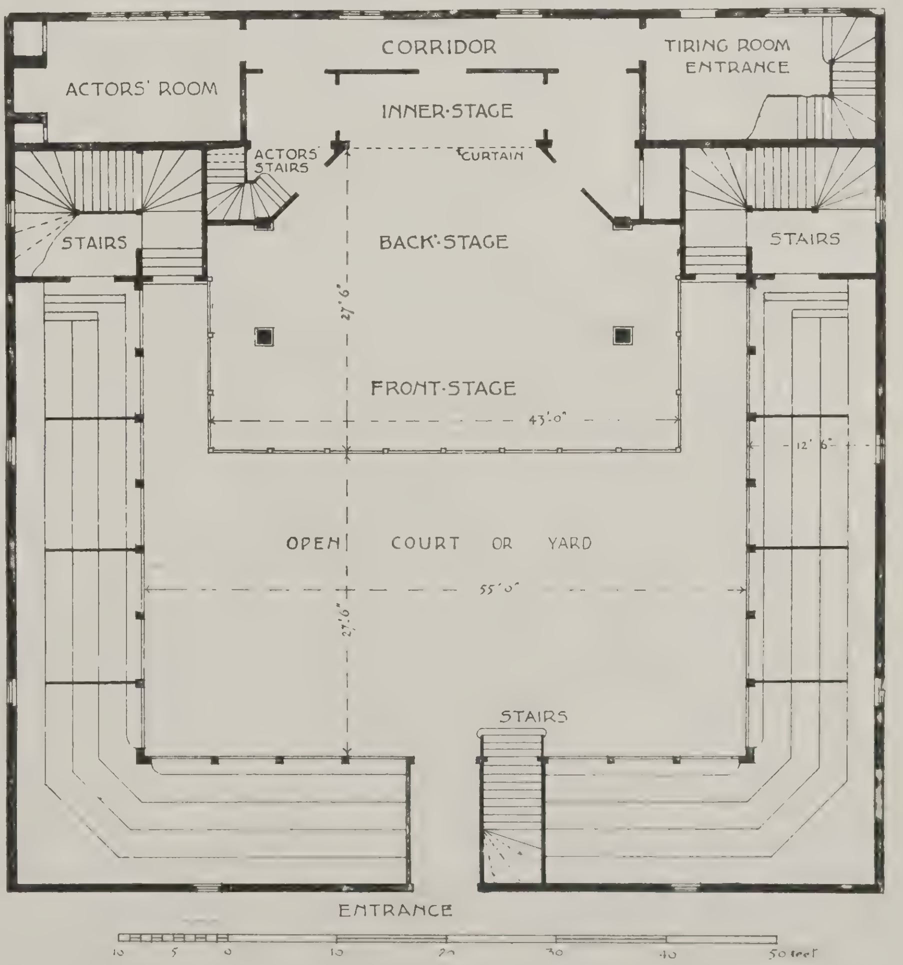
First Floor Plan.

ws unfortunately a bad colourist, and sll more unfortunately) did not know it; he deserved better than the obscurity which his memory has been allowed fall, and the *Edinburgh Review* has quired merit" by directing attention to n again.

he *Contemporary Review* contains a arkable article by Miss March-llips on "The Aristocratic Influence in ." It is written in direct reference to present admiration for the art of the rgian period, pointing out that while ryone is right as to the refinement of it of the English art of that period, no seems to see how very narrow it was ts range of feeling and idea; how com-tely, in its negative as well as in its posi-qualities, it was the expression of the e of a narrow aristocratic caste, and not deal at all with the deeper elements life. It is quite true in the main; nolds's portraits of Duchesses and ies of social rank are perfect; but Rey-ds is almost always a failure when he s to come out into the greater world of as, and to handle subjects of high tic significance. We can, however, y half agree with the writer of the cle. We do not believe in democracy the hope of art. The highest art never been understood by the masses, never will be. Can we imagine a falgar Square crowd caring for or reciating Titian's "Bacchus and adne"? Art will always be mainly the rest of the cultured classes; only the ure of the Georgian society was a very row one. What we want is a wider and per culture, an interest in great ideas great events; and democracy will not us that. In general, democracy has n distinctly bad for art.

n the *Century* Mr. Charles Jacque es some "Recollections of Millet," one he best and most interesting art papers have ever read in a general magazine, written by one who was himself an eminent artist. His view as to Millet's character and art is quite different from the popular one. He thinks that so far from having a decisive mission in art, Millet was in fact very doubtful as to his own aims. He says that Millet was so sensitive and self-conscious that he believed everyone was talking about him and criticising him, and that it was this self-consciousness that made him throw up the whole of his early practice in painting merely because he heard some bystanders remark that he was "an artist who painted nothing but nudes." Now, in fact, says M. Jacque, Millet was one of the finest painters of the nude that ever existed, and his early works of this class were far superior, as art, to the class of pictures of which the "Angelus" is the best known example. Anyone acquainted with Millet's earlier works will know that this is undeniable. Two or three of them were exhibited some years ago at the French Gallery in Pall Mall East, and were little masterpieces of drawing and painting. M. Jacque wants to know what has become of all these early works. They are probably in the hands of private owners who do not know their value. When it has been discovered that they represent Millet's best work they will emerge from obscurity again, and be seen at loan exhibitions and sales.

The *Antiquary* contains an article by Mr. F. W. Bull on Rothwell Church, a sketch of its architectural and archæological history; and one by Mr. James Baker on "A Neo-lithic British-Romano Settlement." This is one of which the remains exist in Leigh Woods, opposite Clifton, and the article may serve to inform many who do not know it that Leigh Woods is something more than a spot of great natural beauty, and is also an important site of very early British history.



Ground Floor Plan.

THE FORTUNE THEATRE. PLANS CONSTRUCTED IN ACCORDANCE WITH THE ORIGINAL DATA BY WALTER H. GODFREY.

(See "The Elizabethan Playhouse," page 167.)

OUR PLATE.

New Head Office of the Munster and Leinster Bank, Cork.

This building is now in course of erection from the design of Messrs. Arthur and Henry H. Hill, the successful competitors in a limited competition. Mr. G. C. Ashlin, R.H.A., was the assessor.

The two leading conditions of the competition were that the business of the Bank should proceed on the premises without interruption during the progress of the work, and that the elevation of the portion of the building occupying the corner of the site should be retained and incorporated in the new design. The former condition, though it hampers to some extent the planning of the new building, and certainly makes the contractor's operations more difficult, is nevertheless essential. The latter condition has fortunately been abandoned; for the existing corner building possesses no great merit, and is a type of design which would only be spoiled by addition.

The new front is being built of local white limestone, chiefly obtained from the Little Island quarries. It is a fine stone—hard to work, and not very suitable for carving—but it lends itself admirably to a severe form of architectural expression.

The columns in the banking hall are of red Brecchia. Six of these were originally designed by the late F. C. Penrose to stand in the south transept of St. Paul's Cathedral to carry the organ loft. These were lying by for several years, and it was by a mere coincidence that they were found to agree almost to an inch with the columns designed for the Munster Bank. The four respond piers and the counter front will be of a white veined marble, and the counter grilles will be of bronze. The general contractors for the work are Messrs. John Sisk and Son, of Cork; and amongst the sub-contractors the following may be mentioned:—Messrs. Homan and Rodgers, fire-proof floors; the Chatwood Safe Co., strong rooms; Musgrave and Co., heating and ventilation; Messrs. Farmer and Brindley, marble work; the British Challenge Glazing Co., roof lights.

COMPETITIONS.

Deptford Central Library.

The awards in this competition are as follows: 1, Sir A. Brumwell Thomas, 37, Old Queen Street, Queen Anne's Gate, S.W.; 2, Castle and Warren, Amberley House, Norfolk Street, W.C.; 3, Henry T. Hare, 13, Hart Street, Bloomsbury Square, W.C. Mr. Leonard Stokes, P.R.I.B.A., was the assessor.

Axminster Cottage Hospital.

The assessor in this competition, Mr. G. H. Oatley, F.R.I.B.A., has selected for first position the design of Mr. Leslie T. Moore, A.R.I.B.A., 3, Raymond Buildings, Gray's Inn, W.C.

LIST OF COMPETITIONS OPEN.

SEPTEMBER 5. COTTAGE HOSPITAL, SKEGNESS.—The Executive Committee invite architects to submit competitive designs and estimates for the Skegness and District Proposed Cottage Hospital. Plan of site and conditions of competition will be sent to competitors on application. Building to cost £900. Premium for design placed first, £15 15s. Designs to be sent in September 5th, to Mr. W. W. Robinson, hon. secretary, Capital and Counties Bank, Skegness.

SEPTEMBER 12-25. COURTS OF JUSTICE, ATHENS.—Competition open to foreign architects. Cost of building not to exceed £160,000. First and second premiums, £800 and £320. Plans, estimated costs and fee of £8 required. Particulars to be seen at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., and in the library of the R.I.B.A.

SEPTEMBER 16. LIBRARY AND ART GALLERIES, MANCHESTER.—Limited to the ten selected competitors in the first competition.

OCTOBER 31. NEW TOWN HALL, MARYLEBONE.—Premiums, £100, £75, and £50. Assessor, Mr. Henry T. Hare, F.R.I.B.A.

JANUARY 31, 1912. DESIGNS FOR LAYING OUT FEDERAL CAPITAL CITY, AUSTRALIA.

LARGE SCHEMES FOR LONDON.

Proposed New Docks.

A new deep-water dock, contiguous to the Albert Dock, and to be called the South Albert Dock, is to be constructed. It is officially stated by the Port of London Authority that the work will probably be begun early next year. The new dock will greatly augment the provision for the large modern steamships which form an increasing proportion of the tonnage using the Port. The land to be utilized for the purpose is already in the possession of the Authority, under powers obtained by their predecessors in 1901. The construction of the dock will occupy about five years, and its estimated cost is £2,105,000. Improvements at the other docks are contemplated, and the total cost is estimated at £4,000,000.

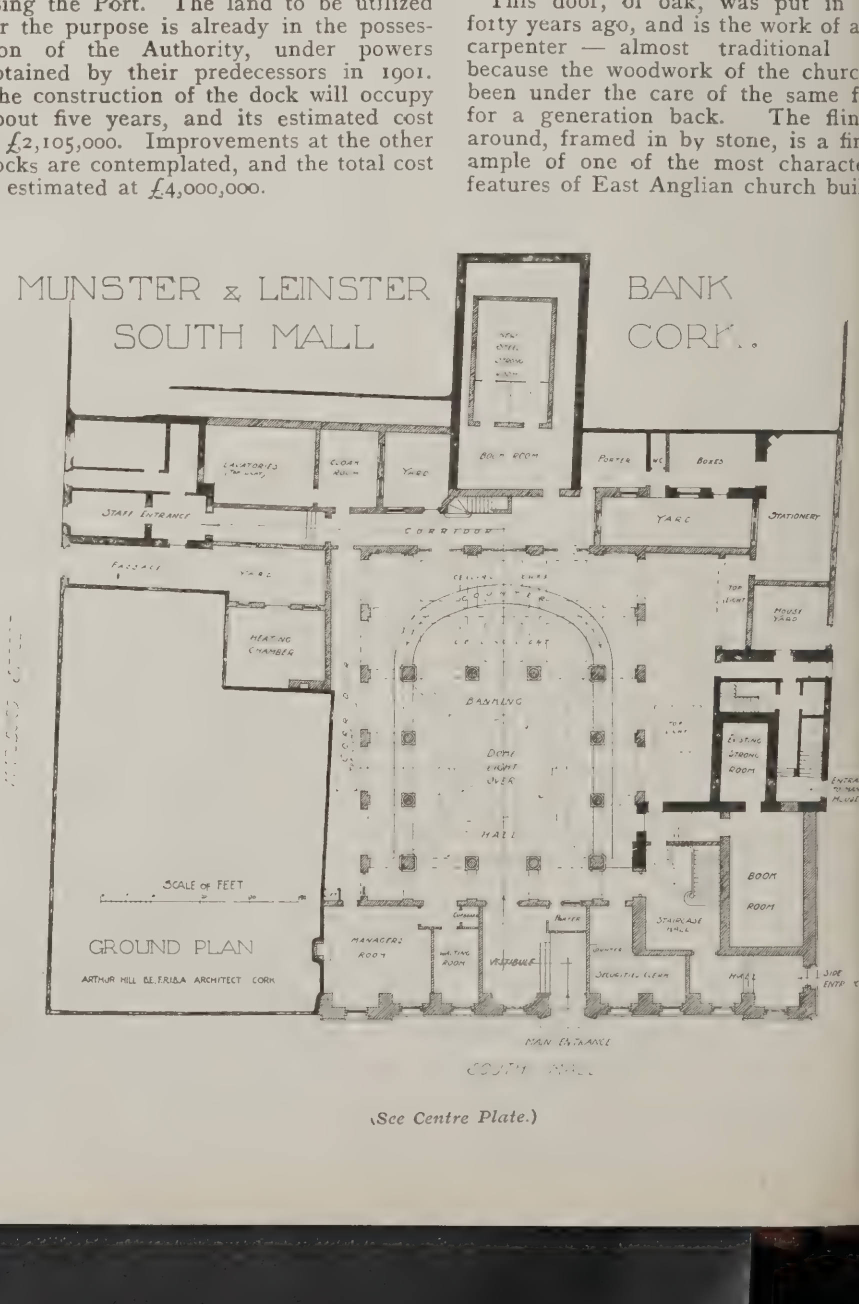
Proposed New Sessions House for Londo

It having been decided that the Lond County Council was the authority to sele a site for the proposed new Session-hou for London—a problem which has be discussed for several years—and that t Standing Joint Committee should deci as to the building and its accommodatio the justices at the Sessions-house, Newin ton, passed the following resolution their recent quarterly meeting: "That view of the unsuitability of the Cou House at Newington for the transaction the judicial and criminal business of t whole county of London, and the continu delay in the provision of a suitable si and provision for such purposes, the cha man of quarter sessions be requested a is hereby authorised to take such steps he may deem necessary." Mr. Clark, o of the justices, said the present acco modation was a disgrace to London. M Watson Surr added that the cells had be condemned by the Prison Commissione and were unfit for the stress thrown up them, especially in regard to the provisi for female prisoners. Mr. E. Smit L.C.C., said the council ought to ma use of the valuable site upon which the di used Clerkenwell Court House stands.

DETAILS, OLD AND NEW.—XX

Door of the Lady Chapel, Long Melfor Church, Suffolk.

This door, of oak, was put in abo forty years ago, and is the work of a loc carpenter — almost traditional wor because the woodwork of the church h been under the care of the same fami for a generation back. The flintwo around, framed in by stone, is a fine e ample of one of the most characteris features of East Anglian church buildin



(See Centre Plate.)

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

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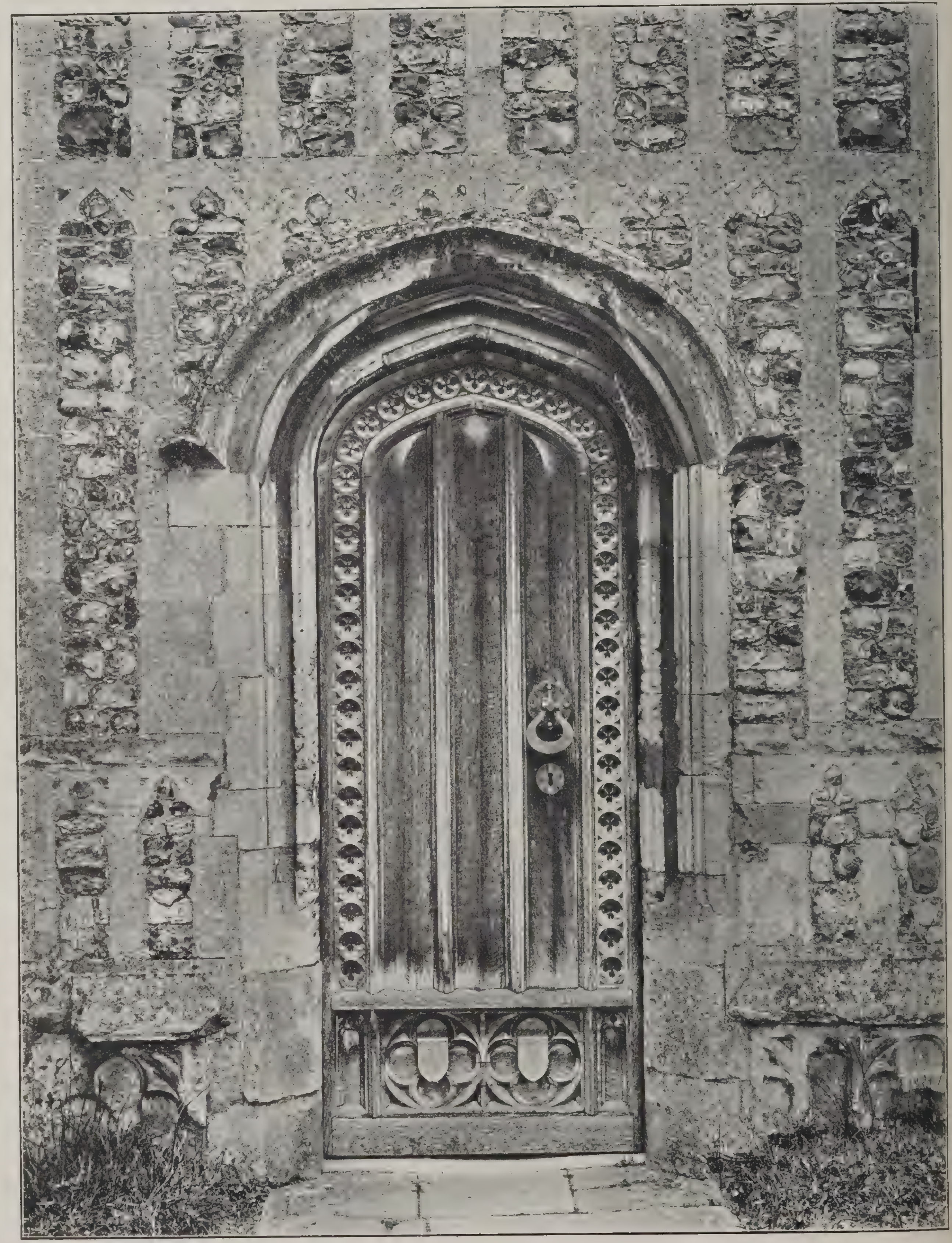
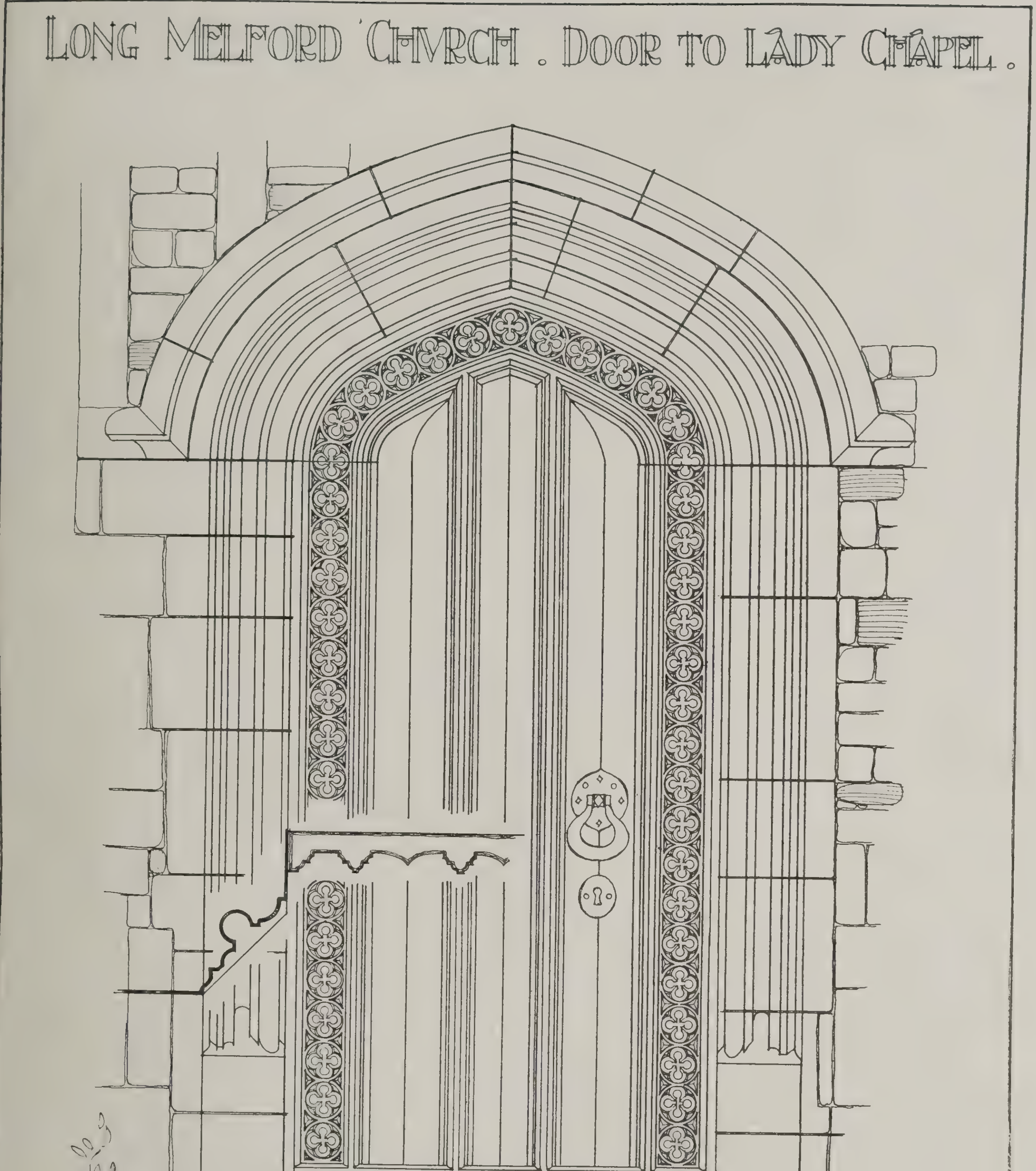


DOOR TO THE LADY CHAPEL, LONG MELFORD CHURCH, SUFFOLK.

(See " Details, Old and New.")


LONG MELFORD CHURCH . DOOR TO LADY CHAPEL .
SCALE OF 12 9 6 3 0 1 2 3 4 FEET.

DRAWN BY W. J. WALKER TODD.

(See "Details, Old and New.")

LIBRARY
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CONCRETE AND STEEL SECTION.

(MONTHLY.)

orrosion of
el and Iron.

The corrosion of steel and
iron is certainly one of
the most formidable
difficulties with which
modern builder, and not least of all the
ccrete specialist, has to contend, and
light that can be thrown upon what,
f all the investigation that has been
oted to it, remains, in some of its
ay aspects, an obscure subject, is cor-
ily welcomed. Researches in this direc-
have been extremely numerous, and
s unfortunate that the results usually
the form of more or less fugitive
noirs or lectures, widely scattered and
various languages. As Mr. J. Newton
end says, in the book on "The Cor-
on of Iron and Steel" which has just
n published, price 6s. net, by Messrs.
gmans, Green and Co., "Iron is being
nufactured in enormous quantities at
present day, and is used for almost
ry conceivable purpose, so that it is
ential for us to gain some knowledge
ts powers of resistance to the destruc-
action of time," by which expression
of course implies the agencies of
ch time matures the effects. The want
some such collection of data as that
ch Mr. Friend has made, he strik-
ly illustrates by recounting the fact
t, failing some such general record,
ch valuable time is wasted in overlap-
g of investigation and in superfluous
iscovery. He instances Adie's dis-
ery, in 1845, that saturated solutions of
mon salt do not corrode iron in the
sence of air with anything like the
idity that tap water does. Three inde-
dent investigators have rediscovered
fact.

---

he Ancientry
of Iron.

It is assumed, not alto-
gether without warrant,
that iron has been used
for thousands of years by
n. Pyramids erected some 3,000 years
ore the Christian era are of such hard
ne as to give rise to the easy supposi-
that the cutting tools used must have
n of iron; and in 1837, the discovery,
ing blasting operations, of a wrought
tool within the Great Pyramid seemed
confirm the conjecture. That such dis-
eries are very rare is easily understood
n we remember that iron tools, lack-
some such specially protective en-
onment as that indicated, will in time
ndle to dust. Mr. Friend need not
c committed himself to so positive a
erence as that to the huge iron bed-
d of Og, King of Bashan. The anti-
ty of iron tools is less dubiously attested
he discovery of them by Mr. Flinders
rie in the ruins of Lachish, which was
erted by the Israelites about 400 B.C.
Chinese, it is stated, were probably
iliar with metallic iron as far back
2357 B.C.; and as for "our forefathers,
Aryans, in India," did not they con-
ct, about 912 B.C., "the remarkable
ar at Delhi, which measures 50 ft. in
ght and 16 ins. in diameter, and is com-
ed of a series of blooms each weigh-
approximately 50 lb. and welded to-
her"? The Greeks were probably
ng iron as early as 1400 B.C., and
liemann discovered fragments in
cenæ, which city was destroyed 561 B.C.
e Romans found the Britons using bars
iron for coins when they invaded this
island. A few such bars are in the British Museum. During the Roman occupation the iron and steel industry was greatly developed; and in the Middle Ages cast iron was being produced in Sussex. By 1909 the world's consumption of iron had reached the enormous figure of sixty millions of tons, and if it is to go on increasing at the same rate the store of ore is in danger of speedy exhaustion. Hence, says Mr. Friend, the supreme necessity of prolonging the life of iron by first discovering the agencies of destruction, and then applying the remedy. In the book under notice he confines his attention to the former object. The latter may well form the subject of a separate treatise from the same hand.

Corrosive Agencies.

In successive chapters Mr. Friend shows, first, the action of air, of pure water, and of moist gases, upon iron; and, next, the action of steam, which has been the subject of much careful investigation, with, incidentally, the discovery of the principle which led to the invention of the Bower-Barff process, in which it is recognised that the formation of magnetic oxide by the passage of steam over heated iron prevents corrosion. In the fourth chapter the various theories of corrosion are briefly discussed. These are (1) the simple oxide theory, which was negatived by the discovery that the presence of liquid water was essential to corrosion; (2) the acid theory, which is conjecturally ascribed to Crace Calvert, who showed that no corrosion takes place in the absence of carbon dioxide; (3) the electrolytic theory as propounded in 1903 by Whitney, who regards the whole subject as being electrochemical, "the rate of corrosion being simply a function of electromotive force and resistance of circuit," water being regarded as an electrolyte; (4) the hydrogen peroxide theory, as elaborated by Dunstan, Jowett, and Goulding, who, while agreeing with Whitney in regarding the presence of acid as unnecessary to corrosion, interpret the phenomena differently from him; and (5) the biological theory, which assumes, apparently without sufficient warrant, the presence of bacteria—"lowly forms of life entering into the reactions." The author devotes an entire chapter to answering the question that heads it—"Is an Acid Essential to Corrosion?" and he finds "that the most recent experimental results are entirely in favour of the acid theory of corrosion." But he adds that "whilst we are bound to reject the electrolytic theory of corrosion, we are not to suppose that the electrolytic theory of ionization, as enunciated by Arrhenius, is likewise to be excluded in the explanations advanced to explain the various phenomena of corrosion; for the two theories are entirely distinct. It is through failure to distinguish between the 'electrolytic theory of corrosion' in its restricted sense, and the 'electrolytic theory' in its wider application, as referring to ionization generally, that unfortunate misunderstandings have arisen. The general interpretation of corrosion phenomena will thus remain exactly the same whether the electrolytic or acid theory be accepted." He hints a possibility that the electrolytic theory of corrosion may be a myth.

Factors in a Complex Problem.

In subsequent chapters the author deals successively with factors influencing the rate of corrosion of iron exposed to natural forces, in which he shows how (and sometimes why) various conditions retard or accelerate corrosion; the action of acids on iron; the action of alkalies; the influence of aqueous solutions of single salts; the influence of aqueous solutions of two or more electrolytes; the action of oils; the passive state of iron—that is, its immunity, under certain conditions, from the ordinary behaviour of iron with regard to changes in its state; the influence of chemical composition, electrical and galvanic action; and, finally, the relative rate of corrosion of iron and steel. From this summary of its contents it will be seen that the book is likely to prove a valuable addition to the technical library of anyone who is concerned in the structural use of iron. It has the merit of being written in easy and intelligible style; and, being scientific in spirit rather than in form, it will be of more value to the architect or engineer who desires nothing more than an intelligent appreciation of broad conclusions, than it will be to the expert in search of elaborate detail.

How Concrete Prevents Corrosion.

As already stated, the protection of iron and steel from corrosion does not come within the author's scope. He has, however, a few pages of discussion on the behaviour of steel embedded in cement. Having described some experiments by which it was shown that corrosive action decreases as the amount of potassium hydroxide increases, becoming nil in the presence of 56 grm. of potash per litre, the author proceeds to say that these results have a most important bearing upon the utility of cements, which consist of an alkaline material, such as lime, in intimate association with corrosive electrolytes such as silicates, sulphates, etc., of magnesium, aluminium, and the alkaline earths. The preservation of steel embedded in concrete, he observes, depends upon two factors: (1) The complete exclusion of air and moisture; (2) the inhibitive nature of the surrounding medium. If, he says, the former of these factors could be absolutely relied upon, there would be less need to consider the second; for, in the absence of air or oxygen, a merely neutral or faintly alkaline cement would serve to protect the iron indefinitely. Air-bubbles in the cement, however, may effect corrosion of a small portion of the iron; and when iron corrodes it undergoes enormous expansion, "a single unit of malleable iron yielding no fewer than ten of rust by volume, and the surrounding concrete must inevitably yield." If however the concrete have a due amount of free alkali present, any small amount of air or moisture penetrating to the iron will have no effect whatever, and the structure may last indefinitely. "Fortunately this is not a difficult matter, for the corrosive salts present in concrete are so slightly soluble in water that a relatively small amount of free lime will suffice." He adds that "when the concrete is made compact, and thoroughly alkaline, the iron embedded within it will last for centuries, particularly if the iron bars be free from sharp corners, and have rounded edges to facilitate air-escape, and proper ramming of the concrete." He records that experiments carried out at the National Physical Laboratory upon mild steel embedded in Portland cement have given very encouraging results; but, so far as we can see, he makes no reference to the transactions of the Concrete Institute, the results of whose recent investigations on this subject were perhaps not published before this section of the book went to press.

REINFORCED CONCRETE RACE STAND, BLACKPOOL

The race stand at Clifton Park, Blackpool, which has just been completed, is remarkable for the rapidity with which the work was brought to a successful conclusion. Commenced early in April of the present year, the work was finished by the middle of June, thus allowing ample time for the stand to mature, and for the inclusion of the necessary interior fittings before the race meeting of August 1st. The time occupied included the design of the stand and the preparation of the working drawings; these, in order to facilitate progress, being made on the site. If the work had not been completed to contract time, a penalty of £100 a day would have been imposed. The stand, which, including the stewards' block, is 500 ft. long, is covered, and is designed to accommodate about 20,000 people. In its erection £10,000 has been involved.

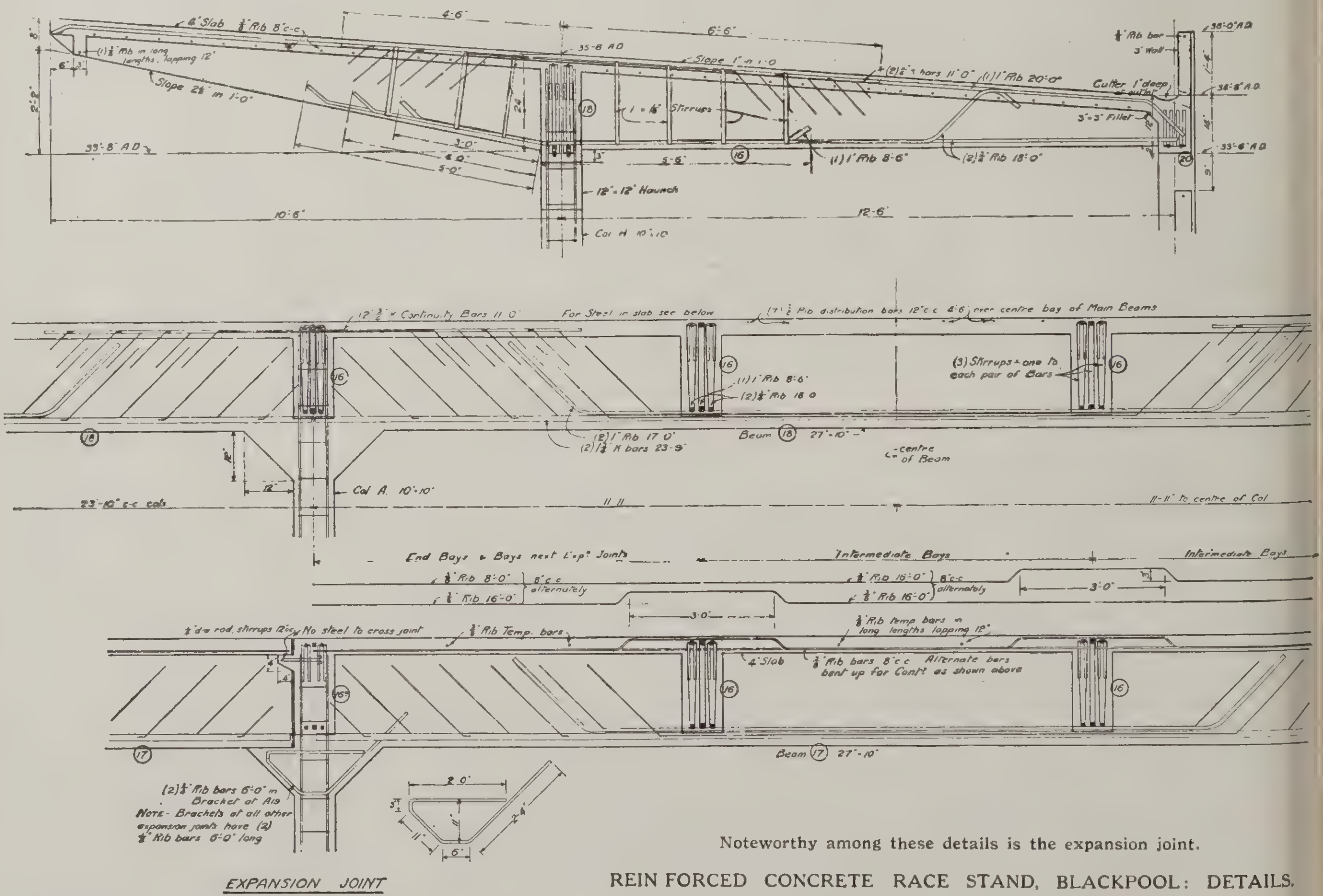
At six weeks, a working load test was satisfactorily imposed upon one bay of the stand, there being no deflection.

The great length of the stand necessitated the provision of expansion joints, which are clearly shown on the working drawings which we reproduce. Three of these joints, which are about ½ in. in width, occur throughout the whole length, dividing the stand into four sections. The roof of the stand, which has been designed to accommodate onlookers should the necessity arise, is finished with a smooth coating of cement and sand, 1 to 1, applied before the body of the concrete had set, no water-proofing material having been used. A half-timbering effect has been obtained at the rear of the me bers' and Tattersalls' portion of the sta affording an effective relief from the oth wise flat appearance of the concrete.

The engineer for the work was Arthur Hindle, A.M.I.C.E., of Blackp and Messrs. J. Parkinson and Sons (Bla pool), Ltd., were the contractors. T design of the stand, on the Kahn syst of reinforced concrete, was prepared the Trussed Concrete Steel Co., Ltd., Caxton House, Westminster.

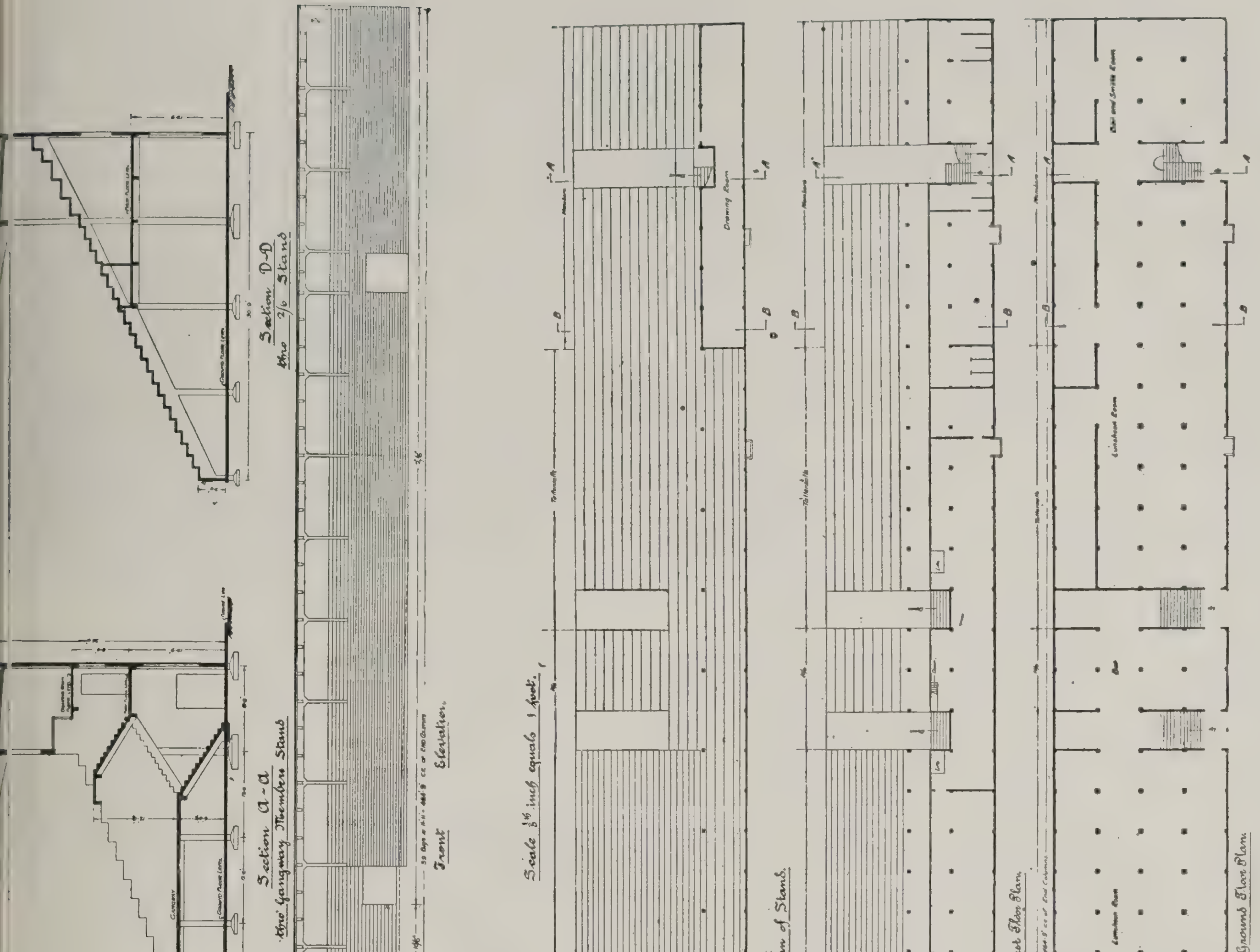
The race stand at Clifton Park, Blackpool, is an example of rapid construction in reinforced concret Begun early in April of the present year, it was finished by the middle of June. The view shows t progress five weeks from the start.

REINFORCED CONCRETE RACE STAND, BLACKPOOL.
ARTHUR HINDLE, A.M.I.C.E., ENGINEER.



Noteworthy among these details is the expansion joint.

REINFORCED CONCRETE RACE STAND, BLACKPOOL: DETAILS.


Race Stand, Clifton Park, Blackpool.
Scale 1/8 inch equals 1 foot.
Section D-D thro' 2/6 Stand
Section A-A thro' Gangway Members Stand
Section B-B thro' Members Stand
Front Elevation
Plan of Stand.
First Floor Plan.
Ground Floor Plan.
Scale for Elevation 1 inch equals 1 foot
Drawing Room
Luncheon Room
Bar
Tattersalls
Members

e roof of this stand has been so designed that, when occasion arises, it may be used for the accommodation of spectators. It is finished with a ooth coating of equal parts of cement and sand, applied before the body had been set. The stand itself, which, including the stewards' block, 00 ft. long, is designed to accommodate about 20,000 people. The total cost is about £10,000.

REINFORCED CONCRETE RACE STAND BLACKPOOL: PLAN, SECTIONS, AND ELEVATION

CONCRETE ARCHITECTURALLY TREATED.

That what is visible ought also to be beautiful is an ideal that is by no means ignored by those who design concrete structures. It is admitted that the problem is difficult, and the attempts to solve it have been more or less desperate. Whether the illustrations here shown answer in any degree to that description, or whether, on the other hand, they may be regarded as being at least fairly successful, we do not pretend to determine. It may at all events be claimed for them that they show a considerable degree of restraint as well as of ingenuity. That is to say, the designer seems to have worked in sympathy with his material, well knowing its limitations, and not attempting to strain it beyond them.

In the curving wall and gateway shown, the aggregate used contained a rather highly coloured gravel, so that the construction acquired a yellowish tone which the architect considered preferable to the cold stone colour characteristic of the ordinary concrete surface. In forming the horizontal bands around the two square gate posts, an attempt was made to produce a contrast by means of a higher finish on the bands themselves. The figures shown on the top of the gate posts are sculptured, carved and not cast. The balustrade shown in the illustration of the pergola was cast in panels on a wood pallet with plaster filling pieces cast hollow and destroyed when the cement had set. The base and cap moulds were of wood. The projecting woodwork shown at the top of the pergola is of cypress, oiled but not varnished. After a few months this wood assumed a silver-grey appearance which fitted in well with the general grey tone of the concrete.

PERGOLA OF CONCRETE.

GATEWAY AND CURVED WALL OF CONCRETE.

STRENGTH OF STEEL FROM STRUCTURAL SHAPES.

In a paper read before the American Society for Testing Materials, Mr. E. L. Hancock, Professor of Applied Mechanics, Worcester Polytechnic Institute, U.S., said that recent studies to determine the strength of steel cut from different parts of the profile of structural shapes have shown some variation in the elastic limit (proportional limit). A paper by Prof. Edgar Marburg giving the results of tests of steel from Bethlehem and standard I-beams was reported in 1909, and a paper by the writer on the same subject in 1910 gave the results of further tests. During the past year the writer has made further investigations into this subject, and it now seems desirable to bring all results thus far obtained under examination in order to see just what variation of the elastic limit exists, to inquire into the causes of this variation, and then to discuss the seriousness of the variations and the possible remedies.

A review of the possible causes for variation in the proportional limit of steel cut from different parts of the profile of a structural shape suggests the following:

(1) Difference in chemical composition.

(2) Difference in amount of work done on the material in rolling.

(3) Difference in finishing temperature of the metal in different parts of the profile.

(4) Cold bending of the beams in straightening (gagging).

Chemical Composition.—The variation in the chemical composition of steel cut from the web, root, and flange does not seem sufficient to explain variations in the elastic limits that have been observed.

In view of this evidence it was deemed unnecessary to consider the steel differing essentially in chemical composition in different parts of the profile. No further study has therefore been given this matter.

Amount of Work Done in Rolling, and Difference in Finishing Temperatures.—It seems almost necessary to consider these two causes together, since one cannot distinguish the effect of the one or the other after the shape has once cooled. Professor Marburg obtained little variation in the yield point and practically no variation in the tensile strength, percentage of elongation or percentage of reduction of area that could be attributed to the position of the test piece in the profile of the beam.

In the first two cases the web gives the highest value, the root next, and the flange the lowest. In the first case there is difference of about 17,000 lb. per squar inch, while in the second there is n appreciable difference. In the third an fourth beams the web gives the highes value, the flange next, and the root th lowest, while in the standard beam the we and flange are practically the same, an the root some 10,000 lb. lower. In thre out of five complete tests the root gav the lowest values and the flange of we the highest.

In the case of six out of eleven standar beams the elastic strength was highest i the web, lower in the flange, and lowes in the root.

Summarizing all these tests, it is see that out of the nineteen beam-section studied, ten showed the relation of hig web and low root values for the propo tional limit, with intermediate values f the flange. The remaining nine represe considerable irregularity. In three bea relation is web. root, flange; in three relation is root, flange, web; in one relation is root, web, flange; and in the relation is flange, web, root.

seems reasonable to suppose that in ng the web and flange get more work e upon them than the root, and also they are finished at a lower tempera . It would be expected, therefore, the root metal would have a somewhat er elastic limit than either the flange he web, and that the web would have highest elastic strength. This would especially true in the thick, heavy ms, and much less true in the lighter beams, where the work done on the e material is more nearly the same for erent parts of the profile. That almost per cent. of the beams reported should v results differing from what would irally be expected challenges the ntion, and one is led to investigate fur- the elastic strength of structural pes.

uring the present year tests have been le at the Worcester (U.S.) Polytechnic itute under the present writer to see irther reasons could be found for the gularity observed in so many cases erto reported, and to account, if pos- e, for the rather low elastic limit in e cases. Nine stub ends of structural pes were selected as follows: Three dard I-beams, 12, 15, and 18 ins.; one in. Bethlehem beam; three standard nnels, 4, 12, and 15 in.; one 10 in. hlehem H-section and one 6 in. angle. f the nine structural shapes investi- ed, only three give the relation web, ge, root. The heavy beam, 15 in. oc shows no variation between web, root lange. The channels all give a higher e for the root, and about the same for web and flange except in the case of small 4 in. channel, where the web is siderably above the flange. In considering the results of tests of these channels it should be noticed that they are all rather light sections, and that in any case the root of a channel received much more work in rolling than the root of an I-beam. The angle showed no variation. The Bethlehem beam section showed the relation of web, root, flange.

A determination of the carbon and manganese was obtained for three of these shapes, resulting as follows:—

		Manganese.	Carbon
4 in. 5.25 lb. channel	...Root	0.473	.258
	Web	0.428	.100
15 in. 53 lb. channel	...Root	0.410	.195
	Web	0.467	.205
24 in. 73 lb. Beth. I.	......Root	0.628	.151
	Web	0.708	.191

The rather high percentage of manganese in the Bethlehem beam may possibly account for the high elastic limit shown for the test pieces cut from it. The high values obtained for the 4 in. channel cannot be attributed to its chemical composition, but may be accounted for in part by the fact of the thinness of the metal.

Cold Bending of Beams in Straightening (Gagging).—After the beams and channels come from the hot rolls and are allowed to cool they become bent, due to the unequal cooling of the various parts. It becomes necessary, therefore, to straighten them while cold. This process is known as gagging, and often causes the mill scale to come off, causing what will be called "strain lines." The presence of these strain lines indicates that the metal has been overstrained in straightening. Overstrain in this connection is to be understood as meaning that the yield point of the metal has been reached in the portions of the beam where the strain lines appear. This falling off of the mill scale is seen in all tension tests of mild steel when the yield point is reached, providing the mill scale has not been previously removed.

The effect of overstraining iron and steel in tension upon the elastic properties has been investigated by Muir, the writer and others, and it has been found to have a very marked effect. It has been found that overstraining a piece in tension or compression reduces its elastic limit to zero or nearly zero, depending upon how much of the yield at the yield point was developed before releasing the load. After a sufficient rest, varying from a few hours to eight or ten days, according to the kind of material, the elastic limit gradually returns, and reaches a value somewhat higher than the original. This is illustrated in Fig. 1, where a piece of steel cut from the web of an I-beam was overstrained, retested immediately, and allowed to rest, etc. In this case the piece was considered overstrained when the full yield *BC*, Fig. 1, had been developed. These phenomena have been obtained by a number of investigators, and may be considered well established. Fig. 1 is not introduced as a proof of this interesting behaviour of the elastic limit, but merely as an example. Since beams are straightened cold at the mills, as indicated by the strain lines, it occurred to the writer that this might be a cause for the low values obtained for the elastic limit in some cases, and the high or irregular values in others.

The occurrence of the strain lines indicates that the material has been overstrained. It should, then, be expected that it would follow, if possible, the same laws that govern overstrained tension test pieces, viz., that its elastic limit would be reduced to zero or nearly so; that subsequent rest would bring this elastic limit back to and even above its original value. It seems reasonable to suppose, however, that the recovery will not be as rapid in a

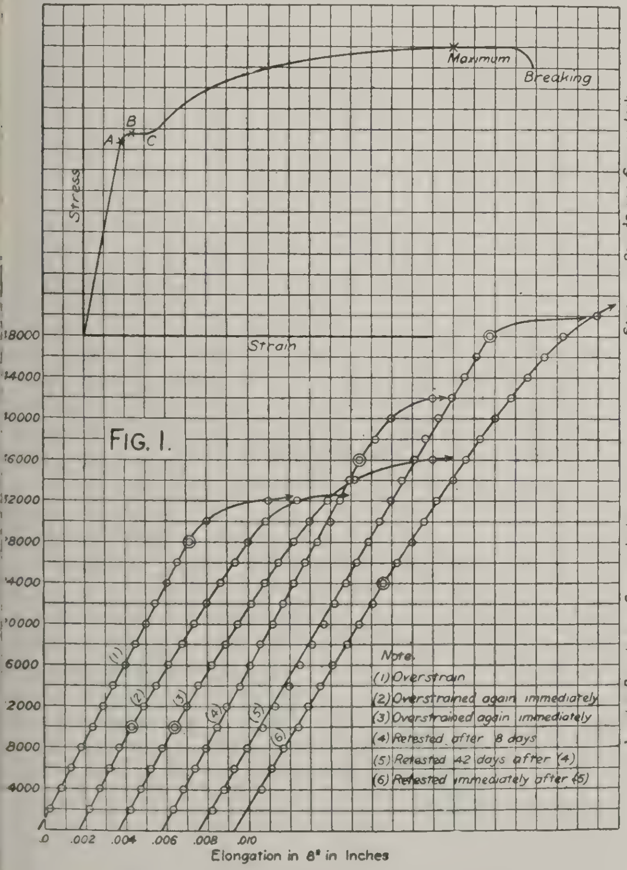
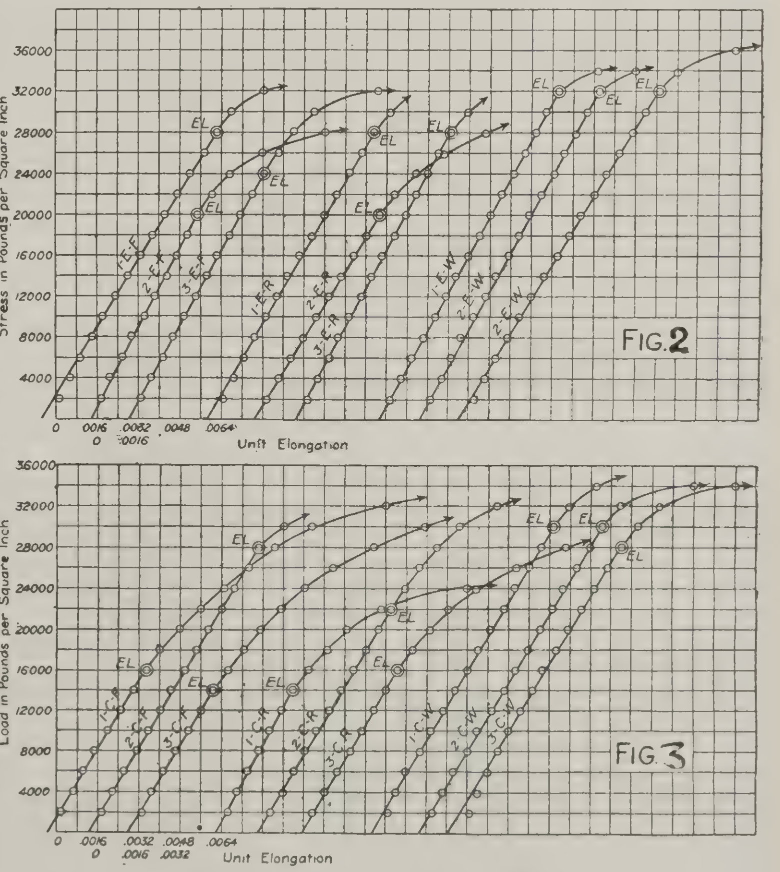
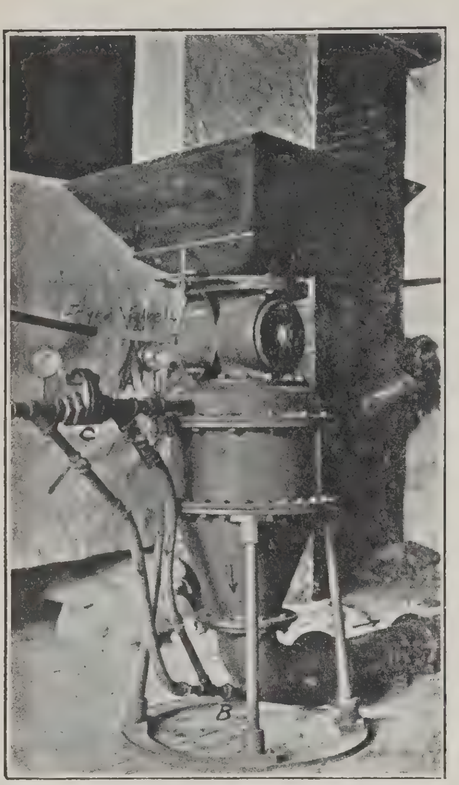


Fig. 1.—Overstrain of Steel from I-Beam.



Figs. 2 and 3.—Tension Tests of I-Beams.

STRENGTH OF STEEL FROM STRUCTURAL SHAPES.



MACHINE FOR CONVEYING CONCRETE BY PNEUMATIC PRESSURE.

beam as in a single test piece; that it will be more rapid in small or thin beams than in large or thick beams; that it will be retarded by the presence of adjacent material that has not been overstrained.

All the evidence seems to show that overstraining a beam lowers the elastic limit of the metal in the beam temporarily, but that this elastic limit returns after a period of rest. The time at which the normal elastic limit has again been reached depends upon the amount of overstrain, the size of the beam (height and thickness), and probably somewhat upon the chemical composition of the material. From the few tests made, the statement might be made that the time necessary for complete recovery varies from three months to a year for beams from 10 to 20 in.

It has been noticed that nearly all the finished test pieces were slightly bent, due, supposedly, to the internal stresses, and an attempt was made to find some relation between the condition of the test piece as to bending and its elastic limit. With the Ewing extensometer used in making the recent tests this bending due to internal stresses does not seem to affect the results. It was noticed that the pieces that were annealed before finishing showed no signs of bending.

Conclusions.—The author's review of the tests thus far made on steel cut from different parts of the profile of structural shapes and a study of the conditions of manufacture of such shapes leads to the following conclusions:

(1) That the tensile strength, percentage of elongation and percentage of reduction of area are practically not affected by chemical composition or treatment during or after rolling; that the yield point is affected but slightly; that the elastic limit is affected, but not seriously when the proper precautions are taken.

(2) The chemical composition of open-hearth beams is so uniform throughout the beam as to cause no practical difference in the strength of metal cut from different parts of the profile of the beam.

(3) If all parts of the profile of a beam were finished at the same temperature it would be expected that the root of the web would have a slightly lower elastic limit than the centre of the web or the flange because of the smaller amount of work done upon it in rolling. But the flange and web, being thinner, are finished at a slightly lower temperature than the root, and so have their elastic strength increased still more due to this lower temperature. The web probably received more work than the flange in rolling.

(4) Overstraining structural shapes lowers the elastic limit of the metal, but not permanently, the elastic limit returning to and above its original value when the material is allowed to rest. Cold straightening of beams probably accounts for some low values of the elastic strength obtained by recent investigations. The evidence of recovery should give confidence to the users of these materials.

AIR-PRESSURE CONCRETING.

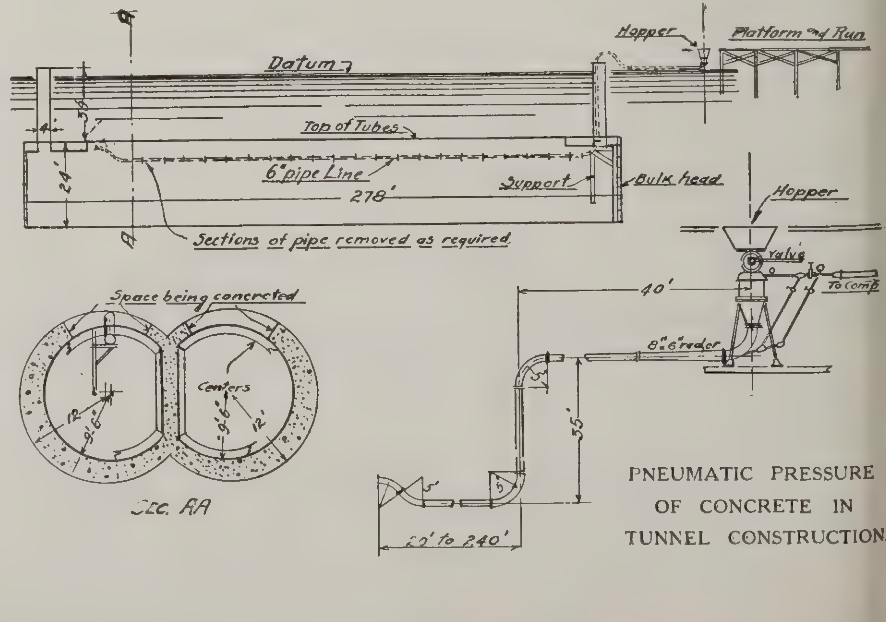
The machine illustrated is really a mixer and conveyor. Conveying but not mixing grout by compressed air has been practised on a small scale in Europe for about 25 years. Most of these machines were hand operated and used for the purpose of waterproofing the outside of masonry tunnels which otherwise would be inaccessible.

The machine, which is the invention of Mr. John H. MacMichaels, of Chicago, consists of a cast-iron egg-shaped receiver of 6 to 24 cub. ft. capacity, which is filled from above by a hopper through an airtight intake valve. The dry materials, sand, stone, and cement, and finally the proper amount of water, intermingle to a certain extent in passing the valve. The bottom of the receiver terminates in a 6 to 10 in. elbow, flanged for connection to the pipeline proper, through which the concrete is conveyed to its place of deposit. The receiver has two connections for the admission of compressed air, one just below the inlet valve marked A in the accompanying cut, and another opening into the terminating elbow at B.

To operate the machine, the material is placed in the receiver, and the intake valve closed, this sealing it at the top. Compressed air under a pressure of 40 to 60 lb. per sq. in. is admitted both at A and B by opening a valve marked C. The air coming through A at the top forces the material toward the elbow, and the air entering the elbow at B escaping through the pipeline at a speed of 1,000 to 2,000 ft. per second, hits the material and produces in it, by the enormous impact, an initial velocity of 30 to 40 ft. per second. As the material travels in the pipeline, it is mixed with nearly double its volume of air, which reduces considerably the frictional resistance of the pipeline. To empty the receiver into the pipeline takes, it is said, from 1 to 2 seconds, and inasmuch as the material travels with different velocities owing to the difference in size, surface and specific gravity, and due also to the greater or less amount of friction in the outer and inner portions of the cross-section of the pipe, a thorough mixing is accomplished.

The admission of air practically simultaneously at top and bottom is really a most important factor; for the function of the air pressure in the upper part of the chamber is hardly more than a feeder to the real conveying stream, which enters at the bottom, and axially with the line of pipe. This stream of air, travelling at a high rate of speed, carries before it what concrete it "picks off" from the bottom of the cone. This, of course, is instantly replaced by the pressure of the air above, and so the concrete is discharged, in reality driven out in "pellets." The action is so continuous, however, that the concrete pours out in a steady stream. The stream though, as stated, is mixed with air, which reduces its density, makes it lighter, reduces friction on the pipe, and in every way facilitates the operation. It is this operation, too, that thoroughly mixes the raw materials into a homogeneous mass. The air acts as a lubricant, and carries the material forward with little waste effort. The entire problem is to use the speed or velocity of the moving air instead of the actual pressure. It is hard to realise this without seeing the machine in operation, but the pressure at top and bottom successfully carries out the concrete mixed with air very rapidly and economically.

Experiments have been conducted by the inventor in making lime and cement mortars which are particularly hard to mix in a batch mixer. To the mortar aggregate and also to ordinary concrete material were added small portions of a dry mortar stain. After being shot through the machine the mortar or concrete is said to present an absolutely uniform colour, and a thorough mixture is obtained. It is said that the machine mixes the material just as quickly and thoroughly whether no water, very little, or a great amount of water is used.



PNEUMATIC PRESSURE OF CONCRETE IN TUNNEL CONSTRUCTION.

Conveyance of the concrete in the pipe-ne is not accomplished solely by the im-act of the air forced in at the elbow, but also assisted by the expansion of the air om the receiver to the end of the pipe-ne. This is said to explain the fact that oncrete can be conveyed vertically to a eight of 100 ft. or more, according to the r pressure used. In a horizontal direc-on concrete has been conveyed 350 ft.

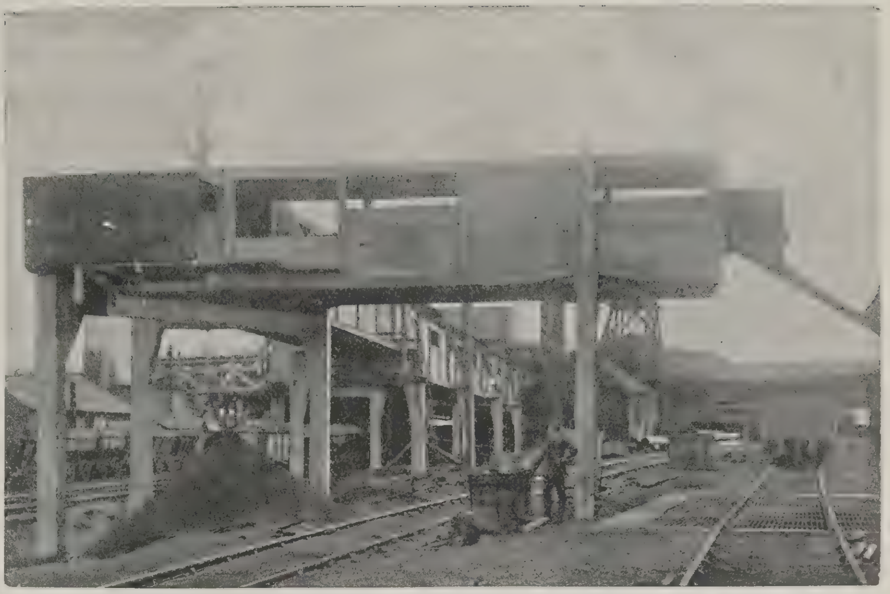
Practice shows that each bend in the ipe should have a radius of not less than ft., in which case no clogging or exces-ve wear occurs. The first discharge into clean pipe coats it with ⅛ to ½ in. mortar. his accumulation is diminished, aug-ented, and displaced by the succeeding harges.

As to the quantity of air required to ansport concrete through a 6 in. pipe o ft. long, it is said to take about 5 to cub. ft. of free air for every cubic foot f concrete, and probably half as much ore for every additional 100 ft. of pipe-ne.

On the La Salle Street tunnel work, hicago, one of the machines was used ecently to pump grout under 52 ft. of ater into broken stone laid inside of offerdams built over the end of the tunnel ubes. Before dumping the loose rock into he cofferdams, 2 in. pipes were secured n place vertically about 4 ft. apart over he area of the dam. Their lower ends ere embedded in the loose rock, and ex-ended to within 6 in. of the bottom of the offerdam. Connection to the conveying ipe was made with a hose pipe. Two 8 ft. ayers were grouted in this way. Grout as also forced under the tubes a hori-ontal distance of 27 ft.

Later the same machine was rigged to onvey concrete down into the tunnel ubes and discharge the concrete into the pper part of the tunnel arch, a maxi-num horizontal distance from the mixer of 290 ft. and a drop of 35 ft.

An air compressor capable of compress-ng 275 cub. ft. of free air per minute to o lb. pressure is used to operate this nixer. It is claimed that the power cost s about the same as would be required to operate an ordinary batch mixer outfit, and the saving comes in the fact that all the expense of conveying is eliminated.



CONVEYOR GANTRY IN REINFORCED CONCRETE, WHITEHAVEN.

CONVEYOR GANTRY IN REINFORCED CONCRETE.

The conveyor gantry here illustrated forms a portion of a surface installation of one of the collieries near Whitehaven, and indicates yet another of the uses to which reinforced concrete can be adapted. The gantry, which is 400 ft. long, is employed for conveying coal from the screening house to the railway trucks, and is an enclosed structure carried on reinforced concrete pillars, the side walls forming the beams between the pillars at spans of 40 ft.

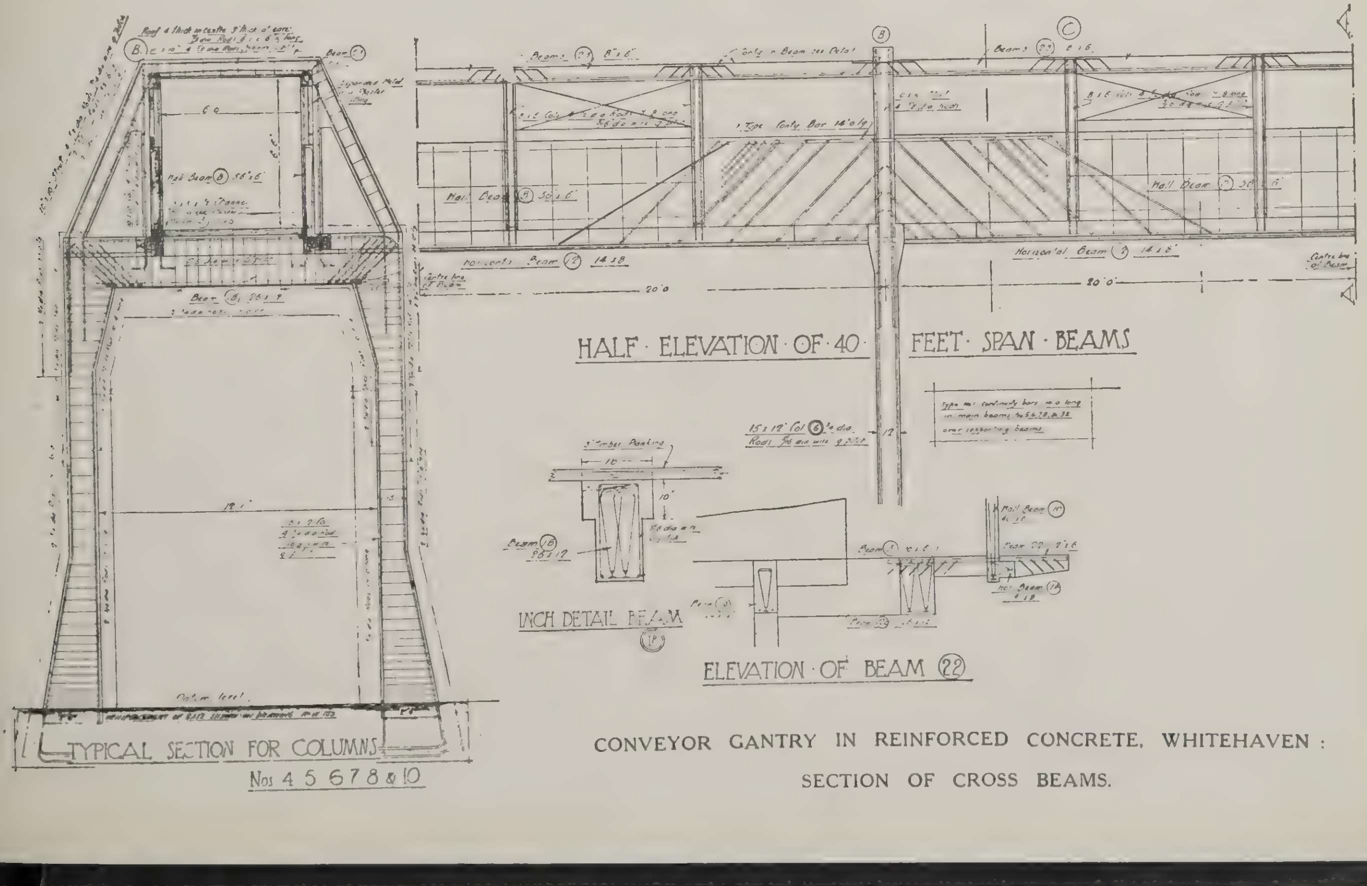
The half-elevation of the 40 ft. spans, as illustrated, shows the advantage of a system with shear members of unlimited length, as the shear members as shown reach from the top to the bottom of the beams, which are 56 ft. deep, and it is mainly to these that the designers attribute the success of the work.

In cross-section the gantry is designed without any bracing, as it was necessary to allow the whole of the space for railway trucks to pass underneath. The absence of this bracing is made up by brackets of considerable length being provided at all joints.

We illustrate, by a section of one of the cross beams under the floor, the "Moss" system of reinforcement on which this gantry was designed; the work having been designed and carried out by William Moss and Sons, Ltd., under the supervision of Mr. Cecil Walton, of Cumberland.

WHO INVENTED PORTLAND CEMENT?

A correspondent of the "Daily Telegraph" writes to know who really was the first man to use Portland cement. The reply is that when building the Eddystone Lighthouse Smeaton made some experiments, which included the proportioning of various lime and clay compounds. These were ground and burnt together to


HALF · ELEVATION · OF · 40 · FEET · SPAN · BEAMS
INCH DETAIL BEAM (17)
ELEVATION · OF · BEAM (22)
TYPICAL SECTION FOR COLUMNS
Nos 4 5 6 7 8 & 10
20'0"

CONVEYOR GANTRY IN REINFORCED CONCRETE, WHITEHAVEN:

SECTION OF CROSS BEAMS.

form cement. In the earliest experiments of Smeaton the natural rock was burnt. However, Smeaton does not seem to have carried the burning process far enough. It was in the year 1842 that a bricklayer of Leeds was granted a patent for a product which he called Portland cement, because, he said, he thought that the set cement resembled Portland stone. This man's name was Aspdin, and he made many efforts to manufacture the cement. Another man, who seems to have made improvements, especially in the mechanical apparatus, was Mr. J. C. Johnson, of Gravesend, who, towards the end of January of this year, reached his hundredth birthday. It would be unfair, the "Telegraph" writer thinks, to give anyone the full credit for the invention, just as it would be hardly correct to call Marconi the inventor of wireless telegraphy, as so many others have added a little to the knowledge which made the thing feasible. It is, however, probable that Aspdin will be remembered by historians as the man who did most to bring Portland cement into general use. It is almost certain that the experimenters of the last century never realised the extraordinary effect of the commercialisation of a really good cement. During the last few years a considerable amount of research work on this subject has been done, and the properties of cement are still being studied closely. This has been very largely due to the extraordinary demand for the material brought about by the extended use of reinforced concrete.

HOUSING IN NEWCASTLE.

The annual report of the City Engineer and Town Surveyor of the City of Newcastle, Mr. W. J. Steele, for the year ended March 31st, 1911, and issued last week, contains the following references to town planning and biulding interests: With the present population (19,280), the density is 31.54 per acre, but if the Town Moor, parks, and undeveloped land are deducted from the total area of the city, the average density will probably exceed 50 per acre, and in those districts where flats are prevalent, the density will be considerably higher than the last mentioned figure.

Whilst the city is bountifully provided with open spaces in the form of the Town Moor and public parks, so far as the public health and well-being of the inhabitants are concerned, open space adjacent to each dwelling is probably of more importance than parks, which are only accessible, to a large number of the inhabitants, at distant intervals of time. It is therefore desirable that the powers conferred by the Housing and Town Planning Act, 1909, in defining the maximum number of houses per acre which may be erected, should have the early attention of the committee now considering that Act.

The number of dwellings erected during the year (each flat being counted as one dwelling) has been 310, and is the lowest recorded for several years. Taking the annual increase in population as about 3,200, and the average number per dwelling at 5.33, the number of dwellings erected is about 290 short of that required to meet the increase in population, but as there are still numerous houses uninhabited, it shows that the rate of building in previous years was considerably in excess of requirements.

Amongst the buildings erected there have been four for cinematograph exhibitions and two buildings altered for the same object, thus making a total number of twenty halls used for this purpose, including those theatres and music halls where it forms part of the entertainment provided.

The number of streets dealt with under the Private Improvement Acts was 43, with a total length of 2,730 yards, which are added to the highways maintained by the Corporation.

IN PARLIAMENT.

(*By our Press Gallery Representative.*)

Progress of Town Planning.

When the Local Government Board vote was under discussion in Committee of Supply, Mr. Morrell asked Mr. Burns to give some information with regard to the administration of the Housing and Town Planning Act. After referring to the deficiency of rural housing he recalled the words of Mr. Burns in introducing the Bill of 1909 with regard to the meanness and squalor resulting from unregulated plans for building around towns. He wanted to know how many local authorities had applied for orders for town planning schemes. Mr. Cassel also spoke of the appeals to the Local Government Board against closing and demolition orders, and attacked "the arbitrary system of administration under which those appeals were working." He mentioned that 13 borough councils in London and 39 local authorities in the provinces had passed resolutions strongly disapproving of the existing form of procedure. He suggested that the appeal ought to be to a judicial tribunal.

Mr. Burns, in his reply, promised to issue a white paper giving particulars of the progress that had been made under the Housing and Town Planning Act. As to transferring the appeals against closing and demolition orders from the Local Government Board to the Courts of Justice, he said that subject was discussed *ad nauseam* when the Bill was before the House. The Government could not comply with the suggestion of Mr. Cassel, no case having been made out in support of his views. Responding to another request to give some information regarding the working of the Housing and Town Planning Act, Mr. Burns said that in 1908-9, before the Act came into operation 1,840 local authorities closed 587 houses. In 1910-11 1,040 local authorities issued closing orders with regard to 2,678 houses. That, he thought, was very satisfactory. With regard to representations as to houses not being in proper repair and unfit for habitation, he stated that in 1908-9 6,312 representations were made and in 1910-11 10,790. The increase was chiefly in urban districts. For the six months ending June 1910 loans for the erection of working class dwellings in urban districts amounted to £47,000, and for the corresponding period in 1911 the amount was £132,000. He wanted to accelerate the progress, and he asked members to help him in stimulating local authorities of mining districts particularly to put the housing conditions into much better order. There were opportunities all over the United Kingdom in small rural areas and urban districts for scores of thousands of decent cottages to be built, not at charity rents, but at rents sufficient to cover the cost of erection, maintenance, and repair. Failing private enterprise he thought local authorities should step into the breach. With regard to town planning he never thought it would have made such progress as it had done during the last two years. Regulations had been issued under the Act for four large schemes of town planning, which had been definitely prepared and sanctioned, and were now in process of realisation. Birmingham had led the United Kingdom in this matter. Schemes at Harborne, Aston, Bromsgrove, Ruislip, and Northwood covered together over 10,222 acres. Applications had been received for authority to proceed at Rochdale and Oldbury, the schemes together covering 2,000 acres. In ten other cases preliminary notices had been given, and in eleven other districts the local authorities had decided to proceed with schemes. In forty or fifty other cases schemes were being considered by the local authorities, and at this moment some 70 town planning schemes had either been sanctioned or were being prepared or considered by the various local authorities. He wished most sincerely to thank the Institute of British Architects for the magnificent Town Planning Conference they held in October last. The Royal Academy must also be most thankfully congratulated upon giving the use of their magnificent building for the finest exhibition of town planning and garden city schemes that had ever taken place in any city in the world. He had never thought that in so short a time any movement could produce such a bibliography—books, magazines, pamphlets, and various forms of literature—as the town planning movement had produced during the last two years. The progress had exceeded his most sanguine expectations, and he hoped every member when he had the opportunity to help the movement would do so by every means in his power.

Wandsworth County Court.

Mr. Hobhouse, in reply to a question by Sir H. Kimber, stated that the accommodation at Wandsworth County Court was inadequate. Terms had been agreed upon for the acquisition of additional land for the extension of the building at considerable expense, and no unnecessary delay would occur in effecting the improvement

PIGMENTS FOR COLOURING CONCRETE.

It has been recommended, in a report presented by the committee of the National (U.S.) Association of Cement Users, that only certain mineral pigments, as specified below, should be employed for obtaining tinted mortars for concrete or stucco surfaces. The substances recommended are as follow: Grey, lampblack, manganese dioxide; slate, lampblack, manganese dioxide; red, red iron oxide; bright red, English red oxide; brown, brown roasted iron oxide, brown ochre; yellow ochre; blue, ultramarine; green, chromium oxide, ultramarine green; violet, violet oxide of iron. The amount which can be safely used is small, owing to the danger of impairing the strength of the resulting mortar. Five per cent. by weight to that of the cement should be the limit beyond which the impairment of strength is too great to justify a larger amount. Even this amount of certain colours which differ little from that of cement—such as yellows and reds—does not produce a marked change from that of the neat cement. Lampblack is the principal ingredient used for darkening. For lightening the colour somewhat, lime is the best material to use. Colouring matters can be used in either a dry form or as a paste. It will generally be found most convenient for mixing, to use the dry form, thoroughly mixing it with dry mortar before the addition of any water.

ANTITIES FOR TENDERING.

a meeting of Mansfield Town Coun-
Councillor Smith drew attention to
inute referring to tenders for builders'
, which stated that "letters were read
several builders declining to submit
ers as quantities had not been sup-
l." Mr. Smith said that it had been
understood thing now, for years,
een builders, that whenever a job was
e let it was to be let with quantities
erly declared. That had not been
. When Mansfield Corporation adver-
l for tenders, they strictly specified
n rate of wages. To his mind it
d have been little trouble to have sup-
l quantities for the work, and it did
tend to success not to do so.
uncillor Vallance supported the objec-
and said that really the Master
ders' Association should be treated with
little consideration. It was against
rules of the association to tender in
petition for work exceeding £100 with-
quantities being supplied, and when
of the principal builders in the town
bound by these rules he thought the
tities should be supplied. It would
paid the Council to supply the quan-
. It was the usual custom, and he
dered that it was distinctly unfair to
ach member of the association tender-
for the work to take out his own
tities.
derman Wilson observed that as a
ber of the Master Builders' Associa-
he felt that they had got a grievance
ving to tender without the quantities.
ontended that it would have been a
l matter for the electrical engineer or
orough surveyor or his assistants to
got out the quantities and specifica-
and put builders all on a level. The
of the matter was that the Master
lers' Association had decided that they
d not tender for work exceeding £100
out quantities being supplied. Some-
the sum of £100 involved a lot of
l. He would move that at the next
ing they place a resolution on their
tes adopting the principle of the
lers' Association, for he thought it
in the interests of all the builders in
own, and on all fours with the resolu-
which they had regarding the stan-
rate of wages. He was in favour of
course being pursued.
uncillor Dunn said that he was very
surprised indeed when there were
antities supplied with the individual
ations to tender. And there were other
smen in the town who had been in-
to tender for different things, and
quantities had not been supplied, so
t was a very difficult matter for them
nder. He trusted that the discussion
night would do away with that sort
siness in the future, and that they
l be enabled to work in better agree-
with the tradesmen in the future than
had been able to hitherto.
uncillor Collins said the quantities for
smen had nothing to do with the
ers. There was no analogy between
wo. The committee were of opinion
he tenders sent should be opened and
west tender accepted. He did not think
was as much to complain about as
een set out. It would only take half
ur or three-quarters to work out the
tities. It was a small job, indeed,
ne or two builders who did not tender
hey would tender if it was not for the
iation. It was the Association who
the rule, and not the Mansfield Cor-
ion. Therefore the Corporation was
blame.
minutes were confirmed.

NEW BRIDGE AT HOLGATE, YORKS.

The first electric tram passed over the new bridge at Holgate, York, last week. The bridge is 172 ft. in length, and weighs something like 1,600 tons. The main girders weigh about 150 tons each, and in all about 500 tons of steel have been used in the work. The two water pipes which supply York are carried on one side, while the gas pipe for the purpose of supplying Acomb is placed on the other. From the rails to the under side of the wind bracing the height is about 19 ft. Special care has been taken in the matter of footpaths, which have been particularly well laid out. On each side of the bridge there is a path of between 6 ft. and 7 ft., which gives the general public plenty of room for walking. The roadway is composed of wood planks and concrete. Between forty and fifty thousand rivets have been used in the construction of the bridge, which is capable of carrying three or four large locomotive engines. The bridge has been painted grey. Great attention has been paid to the fencing in order to minimise the chances of accidents occurring, more especially to children. The entire cost of the construction will be about £8,000, of which amount the Corporation of York are responsible for £3,500. The contractors are Messrs. Handyside, of Derby. The temporary tram shed at Acomb is to be made a permanent structure, while the temporary raised road crossing is also to be attended to in order to make it a permanent crossing to the shed. This work is being carried out by Messrs. Dick, Kerr, and Co.

"INDETERMINATE" STRUCTURES.*

What are known by this title it is the province of this book to show how to "determine" or solve. The structures are only indeterminate by the principles of statics, and therefore we find the author using the word "kinetic" as the opposite to "static." Yet that word is not quite happy, for it implies motion, whereas stable structures are in a condition of arrested motion. It is more usual therefore to see this kind of structure spoken of as "statically indeterminate structures." The book is stiff reading even for anyone with a fair knowledge of mathematics, for the author's style is not the clearest, nor does he make matters easier by giving many intermediate steps in the derivation of his formulæ, while he sometimes uses expressions that are apparently original with him. He has evidently devoted much study to the subject, but shows no great mastery of the art of clear expression; and he should have related his work to the work of others who have gone before. However, the book contains the results of much laborious study for a number of years, and to anyone who adds something to the general store of knowledge and the cause of science we should give our cordial welcome. For the advanced engineering student the book contains much that is valuable, and we hope the author will be given the opportunity of issuing further editions so that he can improve the book in the direction indicated. It is well worth the slight amount of revision which would render easier of acquisition the valuable information which it undoubtedly embodies.

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* "Kinetic Theory of Engineering Structures," by David A. Molitor, B.C.E., M.Am.Soc.C.E., etc. London: McGraw-Hill Book Co., 6, Bouverie St., E.C. New York: Do., 239, West 39th Street. Price 21s. ($5) nett, post free.

ANCIENT BUILDINGS AT OLD SARUM.

Bournemouth Natural Science Society recently paid a visit to Old Sarum. Passing over a convenient causeway made of débris from the castle site, the party entered the outer bailey, and crossed the site of the old Norman Cathedral to a massive fragment of the outer wall of Old Sarum, still in situ over the town ditch; and here at a glance the formidable character of this ancient hill fortress was seen, for the natural hill on its slopes was deeply cut and the chalk thrown out and up, forming a very steep escarpment, notwithstanding the weathering of centuries. Of course, many questions were quickly asked, and as promptly answered by Mr. Hammond, the guide until the arrival of Colonel Hawley. Re-crossing the city site, the party entered the castle by the main gate. Here the massive walls were visible on either side, guarding to-day the excavator's truck of removed débris, and not the armed and mailed warriors of mediæval times. Once inside the castle, with its uncovered basement, walls, etc., one was able to grasp the idea of the older mounds of the East (as Assyria or Egypt), for here were "ruinous heaps" on English soil. Colonel Hawley, F.S.A., now conducted the party to the various parts of the castle as at present disclosed by the excavations, such as the Treasury, Garderobe Tower with its remarkable pits, the Great Tower with its blocked postern, and a partially opened large room, probably the great hall of the citadel, famous in the early Norman history of the Conquest of England by William I. and his sons.

The excavators, after clearing away modern growths of bushes which encumbered the causeway across the ditch to the gatehouse, have now disclosed the lower part of this defensive erection. The entrance was found flanked by two towers which guarded an archway of about nine feet span, but from which the massive ashlar has been removed. Inside the gate was found a large room or hall with its necessary guard chambers attached. Beyond these an archway led to the castle bailey, where some of the ashlar has been left. This gatehouse was found about 37 ft. wide by 55 ft. deep (that is from E. to W.), and must, therefore, have been a first line of defence of great strength and solidity when complete. Within the castle the removal of turf soon disclosed other walls; some of these retained more or less of the ashlar. On the opposite side to the gatehouse were two basement chambers with massive walls covering an area of about 40 sq. ft., close to a postern which is doubtless the Postern Tower of 30 Hen. III. (1246). From the castle the party visited the small temporary museum, and were shown some of the smaller discoveries, such as iron keys, pottery, stone carvings and domestic articles. Up to the present time most of these finds belong to the 11th and succeeding centuries, for the Saxon, Roman, and Celtic relics lie at a greater depth, and will be reached only by further excavations. What this famous city of the Celt, Roman, Saxon, Viking, and Norman may yield we do not yet know, but an outline of Old Sarum history is sufficiently tempting for continued search. Here the Norman Conqueror received the homage of the assembled kingdom. Here, again the Viking Sweyn ended his revenge for the massacre of A.D 1002. Further back still, Cynric, the son of Cerdic, in 552 planted the Wessex standard on the walls of Sarum. Along the roads leading to and from Old Sarum the Roman chariots rattled away to Silchester, Winchester, or Bath. But in times more remote than the Christian era prehistoric men, en route to Stonehenge, would make this hill-town their halting place, and prepare for the religious mysteries to follow on the plain.

SOCIETIES AND INSTITUTIONS.

Royal Society of the Architects of Ireland.

At a special meeting of the Council of the above Institute, held on Wednesday, at 31, South Frederick Street, Dublin, the President, Mr. A. L. Murray, R.H.A., F.R.I.B.A., in the chair, the correspondence dealt with included two letters from the Royal Institute of British Architects, which were referred to the Examination Committee and Professional Practice Committee. Mr. J. P. McGrath, of Derry, was elected a member of the Institute. Applications for permission to sit for the studentship examination were under consideration. A resolution, proposed by the President, congratulating Sir Thomas Manly Deane on the honour recently conferred upon him by His Majesty, was passed unanimously.

Institute of Plumbers.

The Institute of Plumbers, whose headquarters are in Manchester, opened a conference on August 8th in the Scarborough Town Hall. The President (Mr. Cox, of Knutsford) presided, and members were present from Rochdale, Hull, Leeds, Manchester, Sheffield, Newcastle, and many other towns. The Mayor of Scarborough (Mr. W. S. Rowntree) gave an official welcome to the members.

The President in the course of his reply said there was no trade connected with the building trade which could be so useful to municipalities of the country as that of the plumber, connected as he was with the allied sanitary science. Possibly a "scampy" plumber could cause more trouble in a couple of hours than could be got rid of in two years. The Institute was endeavouring to put an end to all such bad work. Dealing at a later stage of the meeting with the National Insurance Bill the President said that all would be agreed that there were many points in the bill which required careful consideration. The period of six weeks for disqualification for misconduct should be doubled. The Institute thought that any tendency towards throwing the whole business into the hands of trade unionism would not be in the best interests of the country. Those who paid the piper ought to have a voice in calling the tune. The unequal payments to men in the building trade and to men in the engineering trade were also objectionable. The next half-yearly meeting will be held in Huddersfield.

TRADE AND CRAFT.

"Nealstone."

Amongst the time-saving building methods of to-day is the use of "Nealstone" on rough brickwork. "Nealstone" is an imitation stone applied in a plastic form, after first rendering in Portland cement and sand. It is claimed that by the use of this material a surface similar to any stone, and in many cases harder than the natural stone itself, can be obtained; and that exposure to the atmosphere does not cause it to deteriorate, but, on the contrary, improves it; while mouldings can be run and carvings executed *in situ* at a much lower cost than in the natural stone. Amongst the buildings recently treated with this material are the new electric theatre, Tottenham Court Road, designed by Messrs. Joseph and Smithem, architects, of Queen Street, E.C., and faced with "Nealstone" by The Coatostone Decoration Co., of 77, Mortimer Street, W. The rapidity with which this work can be executed was shown on this job; the front and side elevations being faced, moulded, and carved in three weeks. The inventor, Mr. A. W. Neal, has been awarded the grand prix, diploma, and gold medal in Paris and Rome for his specialities.

CITY OF LONDON BY-LAWS BILL

Reporting upon the City of London (Various Powers) Bill, the Parliamentary Committee of the London County Council reminded the Council that on January 31st it authorised the presentation of a petition against the Bill, if necessary. Objections were raised on behalf of the Council to the proposal that the Corporation should be empowered to make by-laws to control the construction in, over, or under any street of cellars, vaults, steps leading to cellars, cellar-flaps, coal-plates, lamps, cranes, clocks, reflectors, signs, pavement lights, tablets, sun-blinds, or any other structure or projection, whether of a temporary or a permanent character. The objection was based on the ground that such by-laws might possibly conflict with duplicate or existing powers under the London Building Acts. The Bill, as originally drafted, contained a further clause empowering the Corporation to license wooden structures other than hoardings enclosing vacant lands, and not exceeding 12 ft. in height.

As it appeared that the power sought in the clause might give rise to administrative difficulties in regard to buildings and structures already dealt with under the London Building Acts, an endeavour was made by the Council to arrive at an arrangement as to the structures to be brought within the clause. "As the result of negotiations," the committee reported, "an agreement has been arrived at with the Corporation providing for the insertion in the Bill of amendments (1) to the effect that the Council shall be furnished with a copy of any by-laws made by the Corporation under the clause of the Bill dealing with street projections before the same are confirmed by the Home Secretary, and that the Council shall be entitled to make representations to and be heard by the Home Secretary on such by-laws before the same are confirmed; (2) limiting the operation of the clause to empower the Corporation to license wooden structures to hoardings situate on private property immediately abutting on the public way, and any temporary stand or similar wooden structure erected for use in connection with public processions and festivities; and (3) saving generally the London Building Acts. Clauses and amendments have also been agreed for the protection of the Council in regard to the reconstruction and working of the Deptford tramway belonging to the Corporation. In consequence of the settlement arrived at, the Council's petition against the Bill has been withdrawn. The Bill has passed the House of Lords, and is now waiting the report stage in the House of Commons.

The report was adopted without a division.

BREVITIES.

The Archbishop of York has consent to accept the office of President of the 2; congress of the Royal Sanitary Institu to be held in York in July, 1912.

The erection of a temporary library the old Infirmary site at Manchester w be carried out within the estimated cost £4,000. There will be a mile and a half shelving.

At a recent meeting of London Cou Council a recommendation from the Ec cation Committee to borrow £23,100 a £6,700 for new schools in Culvert Ro and Risley Avenue was agreed to.

On the question of rebuilding the fro of the Town Hall at Hull, a member the City Council moved that this porti of the work should be let by tender inste of at schedule prices. His motion w lost.

The Ironmongers' Almshouses in King land Road, Shoreditch, having be "saved" for the sake of their age, the mates will have to be re-housed, and their accommodation a site of about acres has been acquired at Mottingha in Kent, on which new almshouses will built.

A newspaper correspondent suggests th if the London Corporation's scheme a bridge and road is carried out, the site for a memorial of the late King co be obtained (if the funds permitted) clearing away enough of the houses the Ludgate Hill side of the new road open up a view of St. Paul's and layi out the ground thus cleared as a garden.

At the latest monthly meeting of Clact Urban Council plans for the improvem of Close Lane, providing for the constr tion of a road of an average width of 40 throughout, at an estimated cost of £1,6 were passed, and it was decided to ma up Severn Road (£630), Holland Ro (£1,455), and Central Avenue (£680), d ing the ensuing winter.

A great change has come over the ho ing conditions in the Borough of Stepn In 1901 it was difficult to abate ov crowding owing to the dearth of em houses; but Dr. Thomas, the medi officer, now reports that rents have be so reduced that families which in 1 could not afford to rent two rooms now able to obtain three or more roo at the same price.

A new church hall for Eldon, ne Bishop Auckland, of which the foundat stone has just been laid, will adjoin parish church of St. Mark, and is from design of Mr. W. A. Kellett, archite Bishop Auckland. It will include a m hall, 50 ft. long by 30 ft. across, exclus of a platform which will measure 20 ft. 16 ft. This will be used as a Sun school, and for other parochial purpo The cost is estimated at £1,400.

The Newport (Mon.) Parliamentary Improvement Committee have rec mended the Council to promote a Bill the next Session of Parliament for pow to construct a new bridge, 60 ft. wide, place of the existing Newport Bridge, provide Assize and other law co and accommodation for the police, to borrow further in connection with water undertaking and for other obj deemed necessary for the public conv ence. The Watch Committee have structed the borough architect to prep plans and estimates for the provision such courts and police accommodatio

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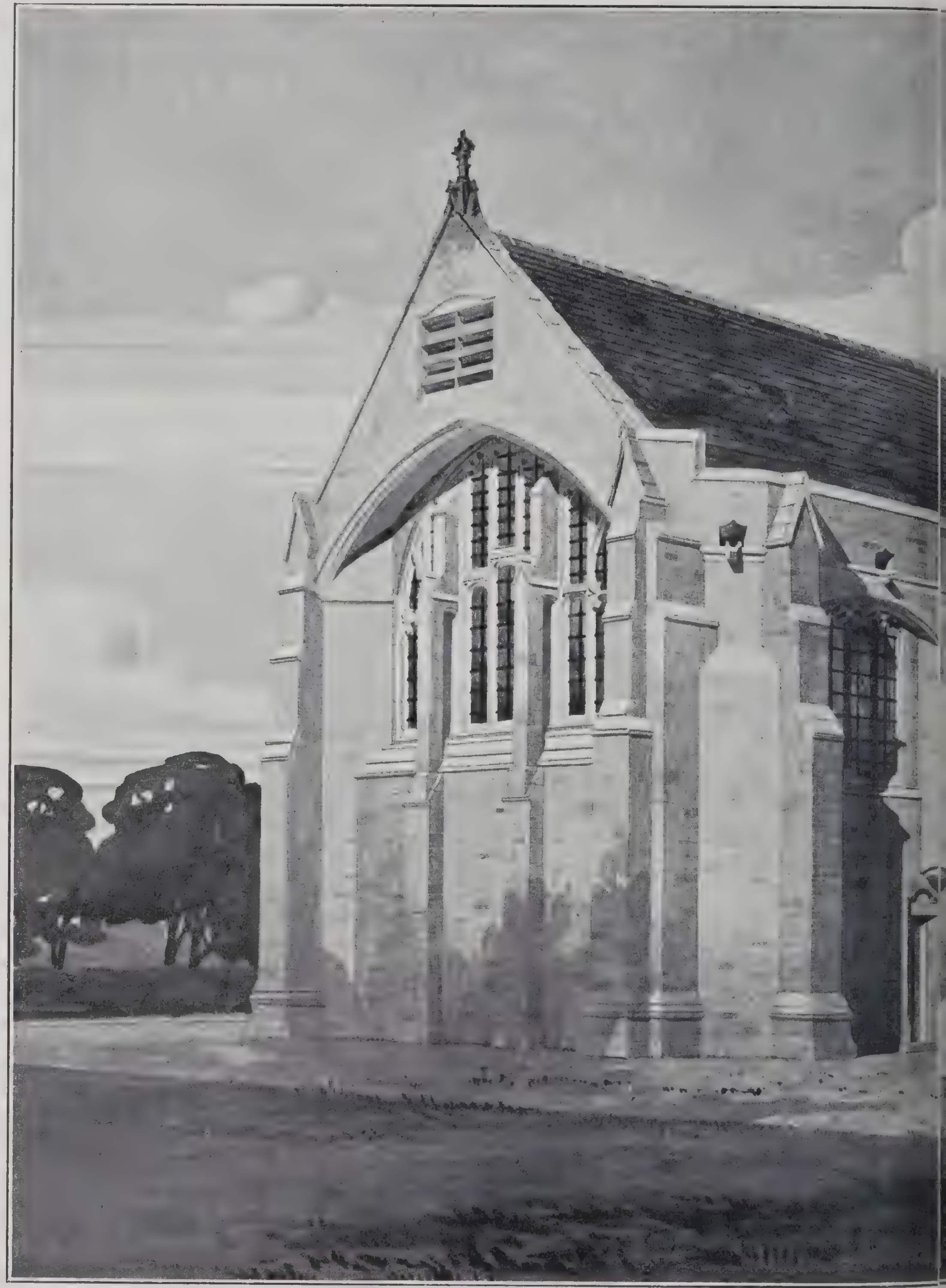
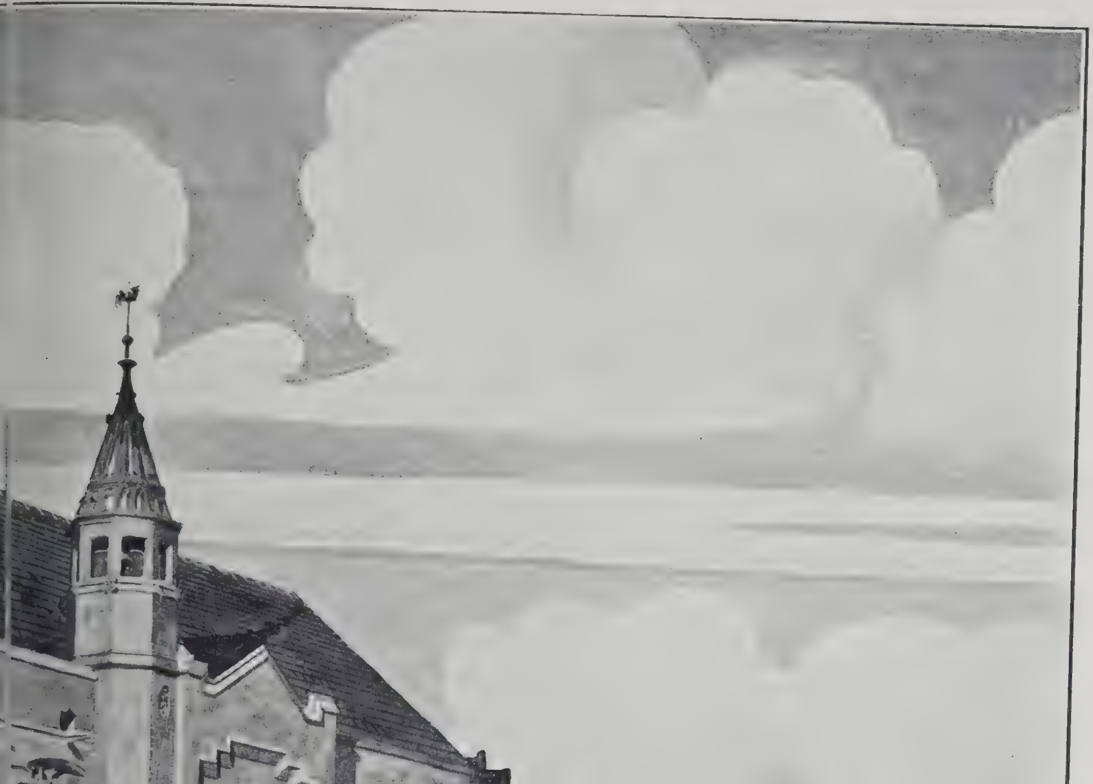
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, August 23rd,* 1911



THE NEW CHAPEL AT THE NORTH-EASTERN COUNTY SC

(Roya



S.E. W. D. CARÖE, M.A., F.S.A., F.R.I.B.A., ARCHITECT.

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THE ARCHITECTS' &
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WEDNESDAY,
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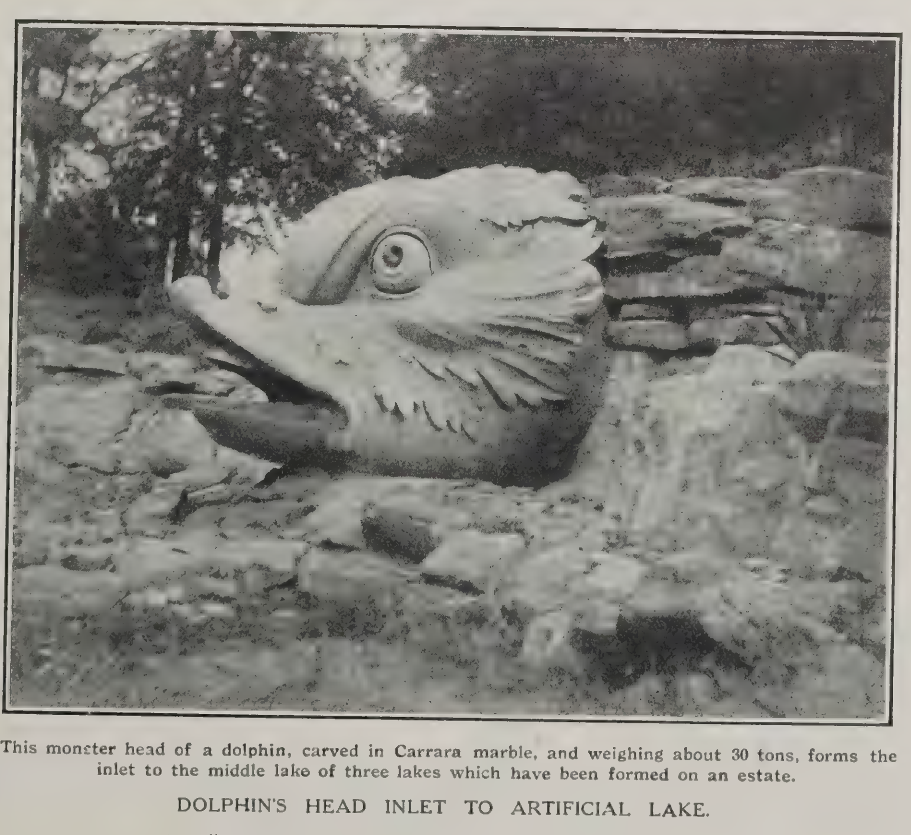
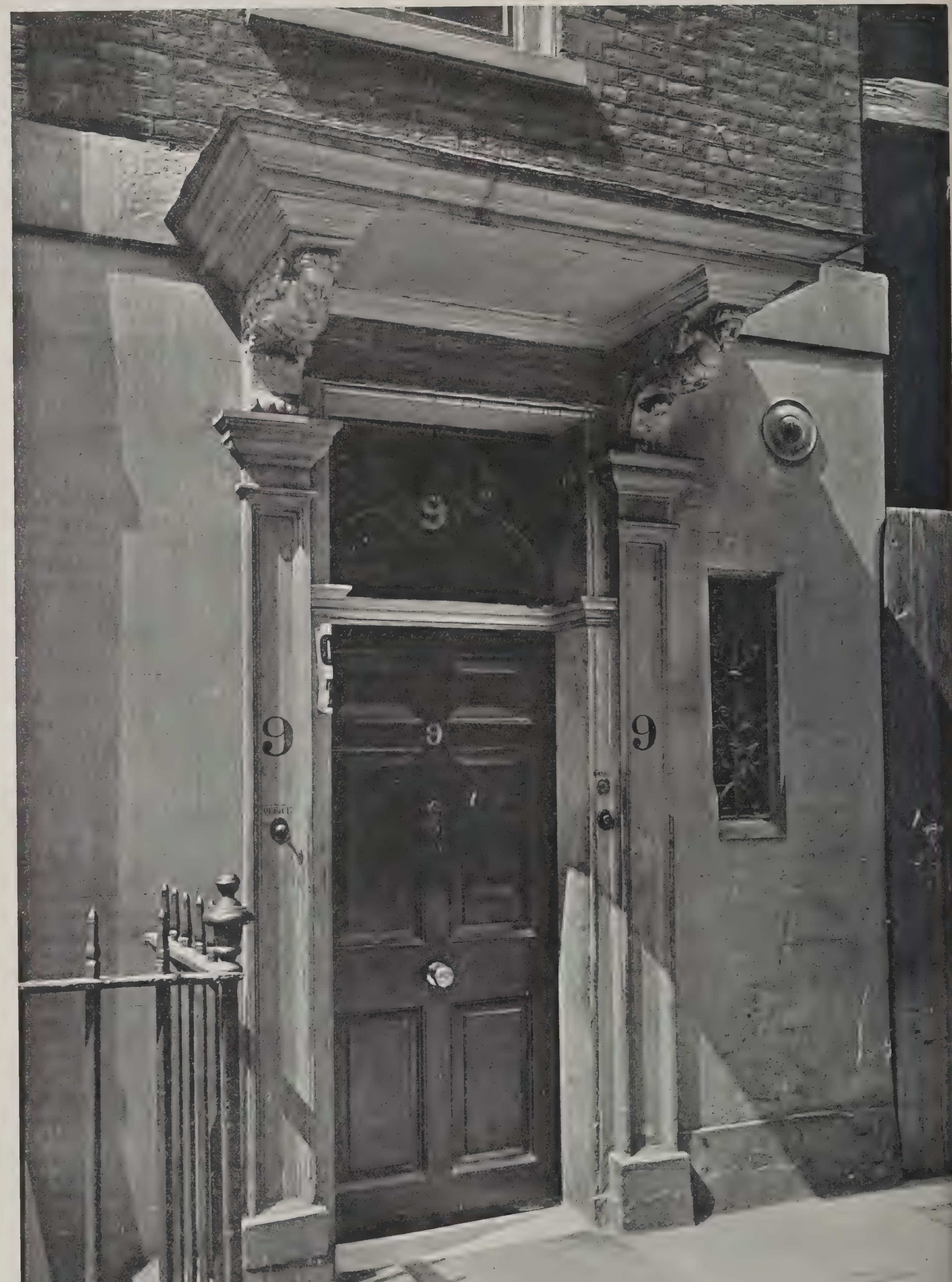
Volume XXXIV. No. 865.



This monster head of a dolphin, carved in Carrara marble, and weighing about 30 tons, forms the inlet to the middle lake of three lakes which have been formed on an estate.

DOLPHIN'S HEAD INLET TO ARTIFICIAL LAKE.

(See "Constructional Works on a Private Estate, page 202.)



The carved grotesques forming the brackets were the most remarkable feature of this eighteenth-century doorway, which has now been demolished.

DOORWAY, CRAIG'S COURT, CHARING CROSS

THE ARCHITECTS' & BUILDERS' JOURNAL.

AUGUST 23rd, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 865.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

A Book on London Building Law.

THE above title may be taken as expressing the actual function of a large and important volume which has just been published under a simpler and shorter title,* the authors being Mr. Horace Cubitt, Mr. H. J. Leaning, and Mr. Sydney A. Smith. The object of the work is well set out in the eface. It is considered that the method by which the prosions of an Act of Parliament are explained by notes apnded to the sections is open to the objection of being of tle assistance to a person who is but slightly acquainted with e law, for it is only by very carefully reading through the hole Act that he is able to find out what particular prosions affect his work. The method pursued in this volume s been to take the various subjects of street formation, ainage, air-space, construction, etc., in consecutive chapters, plaining in plain language what the law requires in regard each of them, and reprinting in the latter part of the volume e whole of the Acts relating to London building, with referces to the corresponding clauses in each Act, so that the ader, while studying the general explanation, can refer to e actual legal wording of the various Acts, to which ample ferences are given, and thus check and verify the statents made in the body of the work. The main part of the ok, we gather, is the work of the first-named author, Mr. bitt; Mr. Leaning supplies the section on the cost of build- g in London, and Mr. Sydney Smith that on rating and luation.

The most interesting portion of the book, and the only one ich we have space to deal with in the present article, is the neral analytical summary of the practical effect of London ilding law, in which are incidentally introduced references legal cases which have had an important bearing on the erpretation by the law courts of various provisions of the ilding Acts. One or two of these we shall have to draw tention to. It is sometimes not till a difference between a ilding-owner and the authorities becomes the subject of gal proceedings that full light is thrown either on the actual ect of a clause, on the one hand, or on the other hand on obscurity of wording which was not realised by the framers a Bill, and only becomes apparent when a court of law has decide on its actual legal meaning.

The first thing we notice in the analysis is, in the opening apter on "Extent and Administration," the bringing out a point in regard to the status of district surveyors on ich there is, we believe, a good deal of popular misapprension. This is given in a quotation from a judgment of r. Justice Channell, to the effect that "the district surveyors persons having a statutory position and duty cast upon m; they are not mere servants of the London County Coun- ," though we believe that they are by many people supsed to be so. They are appointed by the County Council, no doubt, but their power to take action against any infringement of building law is independent of any prior report to the Council. That this is so is, of course, known to all who have much to do with building in London, but its effect on the status of the district surveyor is perhaps not generally realised. The surveyor has to decline to act, and to confine himself to reporting to the County Council, only in the case of "any actual or probable contravention of the Act with which it is not within his competency to deal"; a very improbable contingency.

The determination of the building line in a street is another point on which there is a good deal of misapprehension. Many people are under the impression that the superintending architect, in determining the building line of a street, is exercising a kind of judgment based on his own opinion. Mr. Cubitt thinks that a study of the numerous cases which have been decided in the courts makes its clear that the duty of the superintending architect is not to lay down a building line, but to determine the position of a general line of buildings which is already in existence: "the point to be determined is one of fact, and one which is required to be considered without any reference to the consequences which a decision will entail"; consequences to private owners, that is, the consequences to the public being predominant. But if no building has yet been erected on the street, can the determination of the building line be then regarded merely as "the statement of a fact"? Surely in that case the determination of the building line is a matter of adjudication, though in accordance with certain strict legal requirements as to width of road. When any building has been actually erected (in conformity with regulations) on the margin of a new street, we may take it that, as the author says, "the general line will be formed by the first person who erects buildings." Or there may be two separate buildings, at a considerable distance from one another, in an otherwise empty street; the line joining their two frontages will then obviously be the building line, and the superintending architect in defining it may be merely stating a fact. But on an entirely new street the determination of the building line is surely a little more than that.

The author notices, in connection with the subject of "projecting windows," the curious and indeed absurd anomaly whereby a bay window, with a solid foundation, is restricted to three storeys in height above the level of the footway, while an oriel window is quite unrestricted as to height, except by the general height regulations. This restriction of the height of the bay window is not only quite unnecessary, but is unarchitectural, for the introduction of a bay the whole height of the front is often a most valuable means of architectural expression. But there is another absurdity in the provisions about bay windows which the author does not seem to see. A bay window may be erected "on land belonging to the owner of the building" in a street not less than forty feet wide. But forty feet is the minimum width for a road for carriage traffic, therefore a bay window of 3 feet projection from the main wall (the limit allowed) cannot be on the owner's land; moreover, the bay must not project within the "prescribed distance" from the centre of the roadway, which is by the Act twenty feet. In short, according to the wording of the

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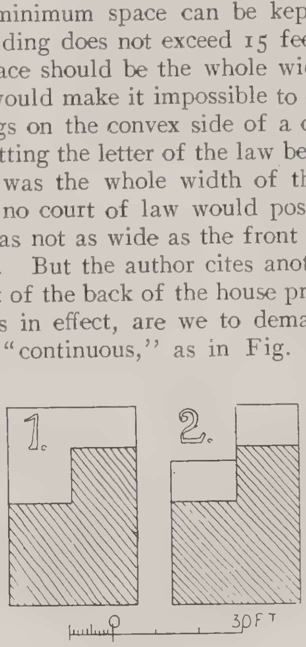
Building in London; A treatise on the law and practice affecting the ction and maintenance of buildings in the Metropolis. By Horace Cubitt, .I.B.A., P.A.S.I.; H. J. Leaning, F.S.I.; and Sydney A. Smith, F.S.I. ndon: Constable and Co.; 1911. 31s. 6d.

section, though a bay-window is allowed by one clause, it is rendered absolutely impossible by other clauses. The section professes to allow bay windows in a road 40 feet wide, but its provisions could only work actually in a road 46 feet wide. The anomaly in wording was publicly pointed out almost as soon as the Act became law,* but it still remains unaltered, and even the acute critic of the book under review does not seem to see it.

There are some curious points noted in regard to the "open space" provisions for the rear of houses. The minimum area is 150 square feet; it must have a depth of at least 10 feet and be "The entire width of the building"—a most wholesame regulation; but by this requirement, as the author points out, the minimum space can be kept only when the width of the building does not exceed 15 feet. The requirement that the space should be the whole width of the building he suggests would make it impossible to erect a terrace of domestic buildings on the convex side of a curved street, but that would be putting the letter of the law before the intent of it; if the space was the whole width of the back measurement of the site no court of law would possibly support the quibble that it was not as wide as the front wall on the outer line of the curve. But the author cites another possible case in which one part of the back of the house projects beyond the rest, and he says in effect, are we to demand that the rear space should be "continuous," as in Fig. 1? He suggests that the requirements would be met by the arrangement shown in Fig. 2, and that it could not be successfully contended that this arrangement contravenes the Act. He cites no test case, but in our opinion it does contravene the Act, both in letter and spirit, and we should be surprised if a court of law did not take the same view.



The author makes a passing reference, which might have been amplified, to the vague wording in section 47 of the Act, limiting the height of buildings to 80 feet "exclusive of two storeys in the roof," a phrase which he oddly describes as "redundant and rather open to misconception." We do not see how it is "redundant," but open to misconception it certainly is, and in its practical operation on limiting the height of buildings it might be made to mean almost anything, especially as "roof" is nowhere defined in the Act, and the height of the "two storeys" is not specified or limited. And why, after giving height in feet for the main building, suddenly change to giving height in storeys for the roof? The clause wants re-drafting in something like this form:—

> "A building (not being a church or chapel) shall not be erected of or be subsequently increased to a greater height than eighty feet (excepting as to purely ornamental turrets or other architectural features or decorations) without the consent of the Council. The roof ridge may be 20 ft. higher, provided that no face of the roof be at less than an angle of 30 degrees from the vertical."

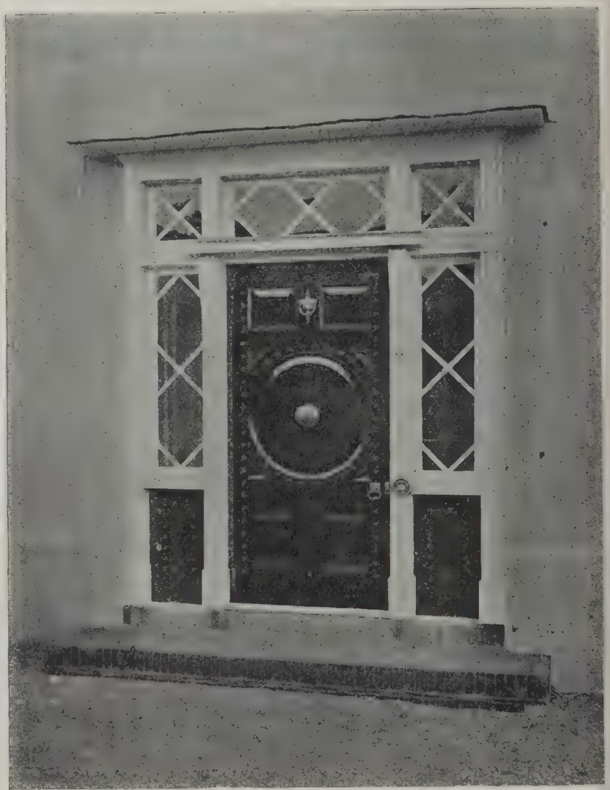
That would be really a definition which could not be misinterpreted, and the question of the number of storeys to be allowed in the roof is out of place in the clause, as it has no effect upon height, with which we are now dealing, but should be determined by other considerations. The word "towers" ("ornamental towers, turrets, or other architectural features") is purposely omitted from our proposed new form of clause, because a tower is too large an exception to make, and migl be read to include an erection of formidable size and heigh

The author notices, but expresses no astonishment at, tl fact that the Building Act contains not the slightest attem to define what a "building" is. The words "building" ar "structure" are used in the Act, there is therefore presumab to be supposed some difference between their meaning; b the meaning of neither is defined. It is possible that this not an oversight. That definition was consciously avoid because of the supposed difficulty of framing any definiti which could not be evaded. It does not, however, appear all impossible to do so. We learn from the Schedule of tl Building Act that buildings unless otherwise sanctioned, "a to be enclosed with walls constructed of brick, stone, or oth hard and incombustible substances." That gives a sugge tion, though "incombustible" is bad; it ought to be alter to "fire-resisting" (especially as the 1905 Amendment ad a schedule of materials accepted as fire-resisting); nothing really incombustible. We may suggest the following d finitions:—

> "A building is any erection composed of stone, brick other fire-resisting materials, so disposed as to enclose a spac whether roofed over or not.
>
> "A structure includes any erection of any material, whi either does not enclose a space or is not composed of fi resisting materials."

We think it would be difficult for anyone to define himse out of that.

In Chapter VII. a case is mentioned (*Attorney-General Metcalf and Greig*) which opens up another debatable point the wording of the Act. The defendants were summoned f having contravened Clause 49 of the Act by erecting a buil ing on the opposite side of a street less than 50 feet in widt of which the height was greater than the distance from t nearest external wall to the opposite side of the street. T defendants appear to have built in receding stages, so th the lower storey alone would count as height towards t street. The High Court decided in favour of the defendant but the Court of Appeal reversed the judgment, consideri that the statutory height of the building *in toto*, and not t height of one of its parts was what the Act had in view; a



"DENE PLACE," WEST HORSLEY, SURREY: MAIN ENTRANCE.
H. S. GOODHART-RENDEL, ARCHITECT.

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*See "Changes in London Building Law," by H. H. Statham, F.R.I.B.A. (E. and F. N. Spon, 1895).

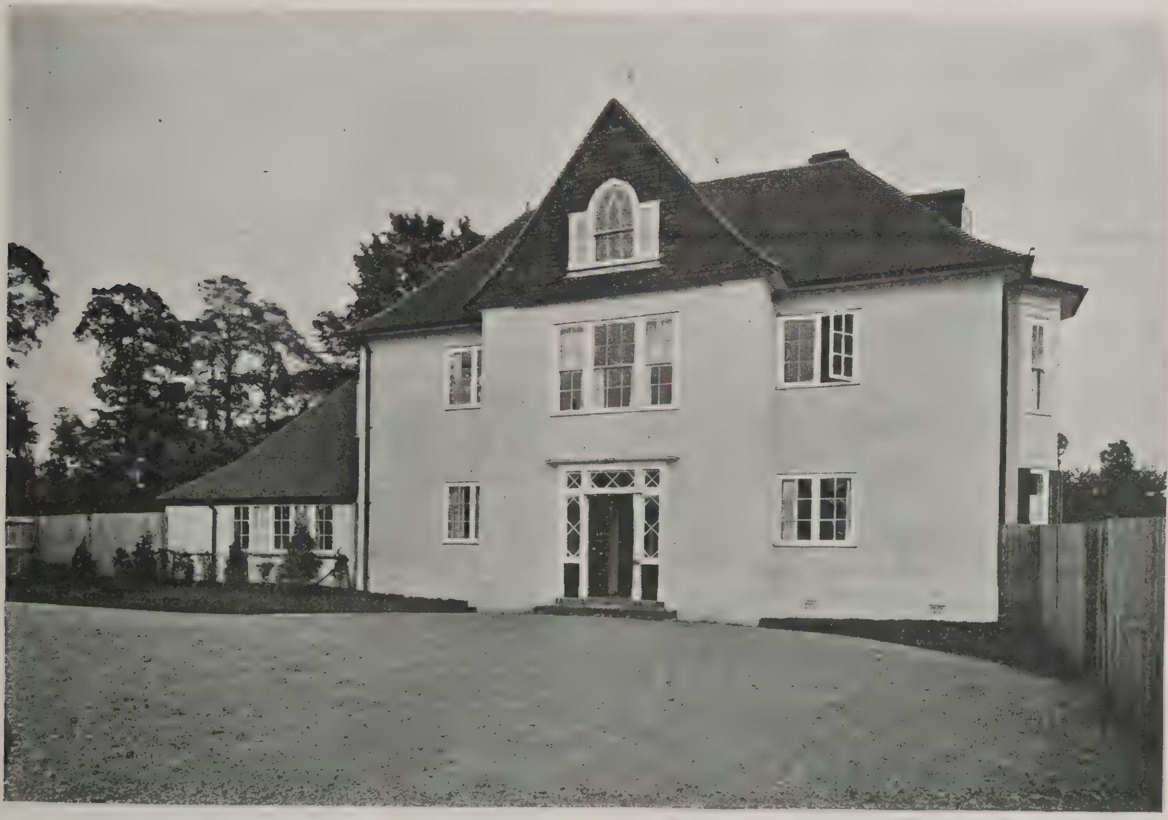
e finding seems in accordance with common sense. But what rikes one is the want of accurate definition in the Act as to at is really intended by the "height" of a building in relation to the width of the street.

We observe that the author has noticed the absurdity of e provision about the woodwork of shop fronts, which may t be brought nearer to the centre line of the party-wall less a pier or corbel 4 inches thick is interposed between it d the centre of the party-wall, which, of course, amounts exactly the same thing; the woodwork still remaining 4 ches from the centre of the party-wall. Whoever drafted at clause must have been half asleep, or not thinking of the eaning of his words, yet it has been allowed to stand untered for seventeen years. There is another point under onstruction," however, which is not touched upon, and ould have been; that is, the naïve requirement that a beam bressummer must have a bearing at each end of at least 4 ches on the wall; a kind of text-book formula which has no lation to the size and span of the beam, as it should have. beam gains materially in stability by having a considerable aring on the wall; some authorities go so far as to say that should have a bearing to the extent of three times the depth the beam, which is perhaps extravagant, but it is an extravagance in the right direction. At all events the bearing ould be proportionate to the length of the beam, and 4 ches is far too little for a long beam.

We have said enough to indicate the plan of this large book d the nature of the information to be found in it. In fact, e may say that it includes practically all that anyone needs know about legislation in regard to London building, and is likely to prove a valuable book both to architects and ilding-owners.

Mr. Wedmore's Lectures on Etching.

THE last issue of the *Journal* of the Society of Arts contains what we suppose is a somewhat abbreviated report of two lectures on etching, by Mr. Frederick edmore. These constitute mainly a kind of short critical mmary of the characteristics of the work of the principal chers of the last two centuries, from Rembrandt down to e present day. Mr. Wedmore makes very illuminating mments on the style and aims of the various artists named, and no one can do this better than he; but we should have thought that lectures on the subject of etching should have included some definite attempt at defining what are the actual powers and the limitations of the art of etching. We gather something on this head from occasional remarks; for instance, the remark of M. Bégot, the distinguished French etcher (quoted with evident approval by the lecturer) that Canaletto "never made excessive use of black" in his etchings. The French master evidently implied that some contemporaries of his own do sin in this way; no one was named, but it would be easy to instance at least three etchers of to-day, all of them artists of power and originality, to whom the criticism would apply. In another sense it might also apply to Piranesi, whose exceedingly dark effects might equally be produced with a thick pen and some very black ink. This was in the etchings which illustrate ancient buildings; he got much more the true character of etching in the imaginative inventions of his "Carceri" series, which are less black in effect and much more free in line. For the essential point in etching is that it is practically a form of engraving with perfect freedom of line, instead of the slow and laboured line of the engraver. Hence the working up of etchings, of buildings, for instance, with great elaboration of line-shading, is really making etching do what engraving could do better, and in a more durable form and more easy of multiplication. The essential power of etching consists in expressing as much as possible with few and freely drawn lines. M. Bégot, before quoted, is himself a model etcher in this respect; so was Whistler; so, still more prominently, is Sir F. Short. Some of the great painters who etched did not thoroughly appreciate the precise capabilities of the method, and a good many of their etchings are of value more for their innate power and originality of conception than as examples of etching. We are unconventional enough to think that this may be said even of many of Rembrandt's etchings. Mr. Wedmore rightly speaks of Rembrandt as "an inspired path-breaker," a great initiator; he showed that works of splendid power could be produced in etching; but, regarded as examples of etching, one may say that they are produced anyhow; he simply wanted his effect, and did not care whether it was obtained in the manner best suited to the etching-needle.



The walls are faced with cream-coloured stucco, and the roof is covered with old tiles.

"DENE PLACE," WEST HORSLEY, SURREY. H. S. GOODHART-RENDEL, ARCHITECT.

CHRONICLE AND COMMENT.

William Kent's Place in Architecture.

WILLIAM KENT has been described by Horace Walpole, who published "a critical study" of him, as "a painter, an architect, and the father of modern gardening." It seems to be generally held that in each of these capacities he failed to rise beyond mediocrity. His architecture is dismissed as dull, his painting as contemptible, and his designs for decoration and furniture as vulgar and ponderous. Mr. Oliver Brackett, in an illustrated article on Kent in the August issue of *The Architectural Review*, admits that some germs of truth exist in such criticism, and that, indeed, Kent was not great in any one of the branches of art which he practised. The author thinks, however, that Kent is entitled to an undeniable place in the history of his country's art, as essentially the man whose work reflects the characteristics of the Early Georgian period in England. Kent was born in Yorkshire in 1684, and was apprenticed to a coach-painter. At the age of nineteen he was painting portraits in London with sufficient skill or promise to induce some Yorkshire patrons to send him to Rome, where he worked under Cavalier Luti, and while there he attracted the attention of the Earl of Burlington, whose patronage brought him into fashion on his return to England. "His oracle was so much consulted," writes Walpole, "by all who affected taste, that nothing was thought complete without his assistance. He was not only consulted for furniture, as frames of pictures, glasses, tables, chairs, etc.; but for plate, for a barge, for a cradle." Two great ladies prevailed upon him to make designs for their birthday gowns. "The one he dressed in a petticoat decorated with columns of the five orders; the other like a bronze, in a copper-coloured satin, with ornaments of gold." It is usual to assign to him such buildings as the additions to Wren's building at Kensington Palace, Houghton and Holkham, in Norfolk, the Horse Guards, and Devonshire House in Piccadilly, but Kent seems to have been in each case less a working architect than an adviser supplying designs, though probably he did not prepare working plans and elevations. Holkham was actually carried out by Brettingham, who had liberty to alter Kent's designs as the work went on; and at Houghton the bulk of the interior decoration was designed by Kent, whose design for the famous Stone Hall inspired the work there of Rysbrack and Antari. The Cupola Room at Kensington Palace, as illustrated in the *Architectural Review*, was Kent's most ambitious effort in that building. It possesses a certain magnificence, of a somewhat barbaric character, with its marbled walls and gilded statues in the niches. Although Kent shows the influence of Inigo Jones, it is probable that he was not of the right temperament to go to this source voluntarily, but was perhaps induced by Lord Burlington to follow Inigo Jones, whose principles and methods he adopted or imitated, not always with much intelligence or discrimination. He published, in 1727, at the expense of Lord Burlington, "The Designs of Inigo Jones," with additional designs by himself and his patron. Overshadowed by no exceptionally brilliant contemporaries, Kent was able to rank as an important architect in a period of mediocrity. Kent is regarded as the pioneer of landscape gardening as opposed to the previous formal system. With Bridgman, he was consulted in the laying-out of the 300 acres of ground taken from Hyde Park to form Kensington Gardens, and he also designed gardens at Carlton House, Rainham, Claremont, Esher, and Rousham. The estimate of him is that he was clever and capable, but not great. Among the illustrations to the article are included Kent's designs for the Houses of Parliament. The contents of this issue of the *Architectural Review* comprise a fully illustrated article on the fine "Terminal Stations at New York and Washington"; new light on the Royal Palace of Eltham, with plans and views; and illustrated descriptions of the University College of North Wales, Bangor (Mr. Henry
T. Hare, F.R.I.B.A., architect); Holly Cottage, Bramha
(Mr. Edgar Wood, F.R.I.B.A., architect); the Lady Chape
Liverpool Cathedral (Mr. G. Gilbert Scott, architect); tl
memorial to the late G. F. Bodley, R.A., at Kensington (M
Edward Warren, F.R.I.B.A., F.S.A., architect); and Pr
fessor Beresford Pite's additions to the Burlington Arcad
and "The Practical Exemplar of Architecture" gives a vie
and a detail drawing of panelling in the boardroom of tl
Metropolitan Water Board's offices at Clerkenwell.

A Notable Example of Architectural Sculpture.

(See plate, p. 199.)

THE triple-arched bridge connecting the new Publ
Offices, in Westminster, with Scott's Home Office,
perhaps the most dignified example of modern arch
tecture in Whitehall. The sculpture in the spandrels to tl
arches is the work of Mr. W. S. Frith. The figures on tl
left-hand side represent the work of the Local Governme
Board; those over the centre arch are symbolical of elemen
ary and technical education; while the figures on the righ
hand side typify Justice, Mining, and Factory Inspectio
The sculpture above the cornice is the work of Mr. Paul
Montford, and comprises two projecting groups and a cent
panel. The left-hand group is an allegorical representati
of Local Government, wearing a civic crown and supporti
the aged and toil-worn worker; while the right-hand gro
symbolises the Home Department encouraging and prote
ing the youthful worker, as, for instance, by the Facto
Acts. Commerce and Industries is represented in the cent
panel, which includes figures of foreign traders, merchan
a clerk, and a female figure in the rear suggestive of domes
duty. The figure beside that symbolical of Labour represe
the textile industries, and the seated figure of a boy deno
technical education.

Inigo Jones's Watergate.

THE Society for the Protection of Ancient Buildings h
urged the London County Council to take steps f
the better preservation of the York Watergate, an
at the Council's request, supplied the information that the b
method of resisting the decay of stonework has been found
repeated applications of baryta and lime, with a final coati
of ground blue lias lime slaked in boiling water, care bei
taken to avoid the unpleasant appearance left by the bary
treatment. This has been the means used to prevent furth
decay of the famous seventeenth-century garden front of
John's College, Oxford, work which was finished last ye
and the treatment has also been employed with satisfact
results on the tower of West Ham church, and at Godalmi
parish church. It is understood that the watergate will
treated on similar lines. The watergate, which was design
by Inigo Jones and executed by Nicholas Stone in 1626, c
sists of three arches framed by columns and entablature,
centre one being crowned with a curved pediment, while th
at the side carry boldly carved lions. It formed the archw
and stairs to the river from old York House, and is all t
remains of that building, which was erected for Villie
Duke of Buckingham, and was the birthplace of Fran
Bacon. In this gateway, as Mr. W. H. Godfrey has
served, the scale of the sculpture, the rustications carr
through the columns in circular blocks, the heavy keyston
and the shield over the centre arch, all indicate a great cha
from the Jacobean detail. In Jacobean work the Cla
orders were generally used either as decorative forms, such
pilasters applied to the old types of structure, or as a li
framework to guide the eye to the successive stages of or
ment. Now, however, we meet compositions which are, f
and last, designs in the orders; their proportions not o
dominate but compose the design, and they deviate from
Roman model only in the greater freedom of treatment. S
freedom is shown where, in this watergate, Inigo Jones bre
his entablature in the centre to take up the keystones of

arch, and breaks the lower cornice of the pediment to receive a fine heraldic shield. “The curved pediment itself, and the idea of raising the centre portion alone, instead of forming an attic or upper stage over the whole gate, illustrate departures which the Renaissance made from the ancient manner.” The rchitectural interest of the gateway is intrinsic as well as associative, and it is a pity that generations of neglect have allowed it to become as weather-worn as it is; but then the irtues of baryta water are quite a recent discovery. Measured rawings of the watergate were given in the Journal of De- ember 30th, 1908.

The Late Jozef Israels.

THE death of Herr Israels brings to a close an artistic career remarkable both for its length and for the continued and equable standard maintained by the painter. sraels' range in art was somewhat limited in regard to class of subject; he was the painter of the tragedy and pathos of he peasant life of his own country; and from this line of subect, at all events since his fame was established, he never trayed. Humour, or the sense of the humorous side of life, e had not; or if he had, it never appears in his painting. ut in portraying Dutch peasant life he always remained an rtist to the core. Whether in such a tragic painting as that f the widow watching in the darkened room by the coffin of er husband (we forget at the moment what title he gave to), of which he painted two or three repetitions on different cales; or in a picture of a cottage girl sitting sewing in a onely room; or two bare-legged children playing in a seashore ool—in all such varieties of subject one was sure to find the ost made of the artistic possibilities of the subject in regard o lighting and composition, and hence his pictures are uni- ersally interesting, in spite of a good deal of repetition of bject. He exercised a great deal of influence on some of e painters who followed him; William Maris, Mauve, and acque, though they painted rural subjects in which cattle ther than men were the predominating interest, owed much his inspiration. It is seldom that a painter has maintained ch an undiminished success in his art through so long a life.

The Edward VII. Memorial Again.

PEOPLE seem to be still dissatisfied about the proposal to place the King Edward Memorial at the top of the new Broad Walk, near Piccadilly, and a further assage of arms in regard to it took place in the ouse of Commons last week. The objections raised it were mainly that it would interfere with the ew of the Queen Victoria memorial from the upper end the walk, which is perfectly true; and that it would en- oach on the ground of the Green Park. This is rather an aginary grievance; the walk, as Mr. Dudley Ward pointed t, is 65 feet wide, and if the memorial statue and pedestal e kept within reasonable dimensions, there is plenty of om for it there without encroaching further on the park. we said, the site is not an ideal one, though it might be cepted if it gave general satisfaction, which does not seem be the case. The principal objection to it really is that it at right angles to everything; if it is to face Piccadilly, it at right angles to the road; if it is to face towards the een Victoria memorial, it would face to the side and not the front of that. A much better position would be to ace it at the east end of the Mall, facing the Queen Vic- ia memorial at the other end. There is plenty of room in width of the road, and the position would be suitable h because it is central and axial at the end of a vista, and ause it would render the memorial a kind of pendant to t of the late King's great predecessor. The Shadwell site ght not to be considered at all as the site for the principal morial. A subsidiary or local memorial there would be ll enough, but to banish the principal memorial to such an -of-the-way position would not be a very good compliment the memory of the King.

Alterations at Drury Lane Theatre.

CONSIDERABLE structural alterations and decorative works are in progress at Drury Lane Theatre, which reaches its centenary next year. It was thought by the management that an opportunity should be taken to improve still further the appearance of the old theatre by altering the entrance, consequently the vestibule is being entirely remodelled. The ceiling has been panelled and enriched beams added with a modillion cornice to the walls. The walls have been treated with a 6ft. high dado in polished mahogany running all round the vestibule, and in place of the old solid doors leading to the rotunda and staircases, handsome French doors in mahogany have been put, with bevelled plate glass panels. The existing lobby doors have also been brought into harmony with the new scheme of decoration. The large saloon over the vestibule, which is a very finely proportioned apartment, is also in the hands of the decorators, and considerable additions are being made to it. The main staircase ceilings needing reconstruction, an opportunity has be taken here also to put in a finely modelled ceiling with new lantern lights over each staircase. It is proposed also to follow this up at a later date by an entirely new scheme of decoration throughout the staircases, the spaciousness of which lends itself to very fine treatment. It is interesting to note the difference between the heavy construction of the old wooden beams of the theatre now removed and the simple form of steelwork replacing the original work. As is customary at Drury Lane Theatre, these improvements have had to be carried out against time, in order that the house may be opened for its autumn production; but the architects, Messrs. Pilditch, do not anticipate any difficulty in having the house ready by September 14th, the date fixed for the re-opening.

Property Owners and Clause 51 of the National Insurance Bill.

MISS OCTAVIA HILL, whose practical acquaintance with the phases and details of the housing problem is probably unrivalled, has written to the *Times* emphatically maintaining that great evils would remain should the clause pass even in the amended form. Mr. Lloyd George, Miss Hill observes, proposes to limit the no-rent time to three months, but three months' loss of rent is very serious to many owners, and why should an additional insurance benefit be paid by the owner of a house where an invalid may be? He also asserts that this provision is only to apply in cases of serious illness. It is said on his behalf, “no humane landlord would drag a man or woman suffering from pneumonia out of bed and fling him or her into the street.” Certainly not, but if Mr. Lloyd George really believed such a process went on, the clause would be a most insufficient protection, as it would give special privileges to the insured person and leave unprotected every other member of his family. But Mr. Lloyd George is too good a lawyer not to know that under the present law an ejectment order can only be granted after a tenant has had an opportunity of going before a magistrate to show cause why the notice to determine his weekly tenancy should not be granted. If, it is urged, illness exists in any member of the household the magistrate refuses the order. Why is the insured man or woman only to have exceptional treatment? Clause 51, Miss Octavia Hill insists, should be struck out. It is objectionable because it offers a high premium on malingering (of which there will be much under the Bill in any case), and it throws on the landlord the onus of proving that malingering exists. This is unfair. As to rent accruing, it should accrue during illness, if justice is to be done to landlords, and recovery should be possible in a Court of law if the Judge decides, when the time comes, that a tenant can pay. The clause makes a favoured citizen of the insured man at the exclusive cost of his unhappy landlord. It ought to come out of the Bill.

ENGLISH AND FOREIGN PLANNING OF CLASSROOMS.

BY WILLIAM H. WEBB, Licentiate R.I.B.A., M.R.San.I.

At the Belfast Congress of the Royal Sanitary Institute, Mr. William H. Webb, Licentiate R.I.B.A., read a paper on "School Classrooms: A Comparative Study of English and Foreign Methods of Planning," and gave a very useful summary of the salient points in the planning of classrooms in accordance respectively with British and foreign practice.

THE classroom being the essential unit of the school building, it is the purpose of this paper to study in detail its design, arrangement, and finishings, with a view to securing better hygienic conditions in the classrooms usually designed for public elementary schools.

1.—*Examples and Proportions.*

Figures 1, 2, 3, and 4 are common types of school classrooms in England, France, Germany, and Switzerland, and show at a glance the different methods of arrangements of desks and the shape of classrooms.

The particulars in which the classrooms in American and Continental schools are superior to those in English schools are chiefly in the matter of better provision for gangways, a greater distance between the desks, better direct left-hand lighting, and extra facilities for supervision by the teacher.

The chief object to be borne in mind in the planning of the classroom is to secure the concentration of the scholar on his work, in which he is assisted by the voice of the teacher, and to afford the teacher complete control of the classroom, isolated and independent, without communication of any kind with the adjoining classrooms. In this respect the general practice in Continental schools is a striking improvement on that of many English examples, in which glazed doors and glazed movable partitions between the classrooms are much too freely introduced. Having regard to the many complaints which are made as to noisy schools and the throat-hoarseness of teachers resulting therefrom, it is remarkable that this point has not received greater attention by school medical officers and architects.

The length of the classroom should be determined by the acuity of vision of the scholars, and the vocal energy of the teacher, and the *width* should be limited by the application of the rules given in the paragraphs dealing with lighting.

The application of these two rules has resulted in the adoption, in nearly all countries, of a rectangular classroom having length and width in the proportions of 3 to 2 or 5 to 3. These proportions ensure good lighting for all desks, afford better facilities for supervision by reason of a narrower angle of view of the teacher, and the superior acoustic properties of the room.

The *height* of a classroom, which should not exceed 13 ft., is determined by the question of acoustics and of cost. Many Continental authorities consider that the width of a classroom should not exceed one and a half times its height, which view is confirmed by Dr. Kerr, Medical Officer (Education), London County Council, who has recently stated that classrooms should not exceed 20 ft. in width.

2.—*Walls and Finishings.*

If the suggestions contained in the report of the recent Departmental Committee of the Board of Education on the cost of school buildings are adopted, buildings of the permanent type, of which the notes under this head mainly treat, may be designed by the architect in the various methods of reinforced brickwork or concrete so successfully employed in other structures; and for those division walls between classrooms, clinker breeze, hollow and solid concrete partition blocks offer considerable advantages in regard to facility of construction and economy in cost.

The use of glazed brick dadoes, which is in any case open to many objections, would not be practicable with walls of this description; glazed tiles, which, however, are open to similar objections, could be employed if desired, but in the author's opinion the use of a cement dado is much to be preferred. The portions of the walls above the cement dado and ceilings require to be finished with a plaster of a much softer description than that generally used, both for acoustic reasons and to prevent undue condensation. All the surfaces should be brought to as smooth a face as possible, with the internal angles between walls and ceilings rounded in the plaster.

The colouring of the walls should be most carefully selected, as the value of reflected light from suitably selected tints cannot be over-estimated. The most suitable tints for this purpose are those of the sage-green or eau-de-Nil, containing a proportion of about two-thirds of body white. But the dadoes should of course be finished with a darker tint, with a plain line band as border.

3.—*Floors.*

None of the materials at present used for flooring meet with all the requirements of an ideal classroom floor, which should be noiseless, warm to the feet, hard-wearing free from liability to splinter, jointless, of such a character as to be easily cleaned, and, whilst combining these qualities, should be inexpensive in cost and maintenance.

A further point of great importance is the necessity of preventing, as far as practicable, the nuisance and danger to health arising from dust, which is now being dealt with by school authorities in a variety of ways. Oil, dust-allaying preparations, and other discolouring and evil-smelling compounds are being used for this purpose. Apart from other objections, this method involves continual annual expense, which it should be the aim of the school architect to avoid.

Monolithic floor coverings, of which there are several kinds having a basis of sawdust, asbestos, and cement, with a colouring pigment, are now being introduced into this country: but in those countries where this material has been more extensively used, experience has shown that, while it presents considerable advantages from a hygienic point of view, it does not, in practice, owing to its friable character and the liability to fracture under changes of atmospheric conditions when laid in large areas, such as school classrooms, give the desired results.

For some years linoleum has been used for the purpose of covering floors in classrooms in America, France, Germany, and Switzerland, and the results obtained have been so far satisfactory that in those countries there is an increasing demand for its use for this purpose.

This material, when laid and glued on a smooth and solid surface, is one which should be strongly advocated for classrooms in all localities where the character of the shoes of the children would not be likely to cause undue wear and damage to the material. It presents an easily cleaned, impermeable, and noiseless surface, and, when laid as described, has great resistance to wear, whilst combining all the desired before-mentioned conditions.

The cost of laying linoleum compares favourably with batten, parquet or wood-block floors, and the facility and economy with which cleaning and repairs can be effected are points of considerable importance. In the case of three-storey buildings in town schools, the saving in the height of the building, owing to the less thickness of linoleum compared with that of wood-block or batten flooring, is also a point for consideration.

Apart from any other consideration, the gain from the point of view of hygiene alone is sufficient to warrant the extended use of this material.

4.—*Aspect.*

The aspect of a classroom should determine the method of planning or lay-out and the orientation of the building shoul be such as would secure, for as many o the classrooms as possible, that aspec which gives to the rooms and desks ampl lighting, while securing beneficent sun shine for the longest period. Educatio authorities should note that sunshine i unequalled as a germicide and cost nothing.

Many authorities in this and othe countries agree that the best aspect fo classroom purposes, from all points o view, is that to the south-east.

Far too little attention has been give to the matter of aspect in England, wher for a considerable part of the year, the is an almost total absence of sunshin It is remarkable to note, in regard to som of the latest schools, and the publici given to various types and the advantag claimed therefor, mainly in matters o ventilation, that this vitally importa point, affecting the health of the schol and the warmth of the building, does n appear to have received that consideratio which the benefits to be derived therefro would merit.

5.—*Lighting.*

Natural.—Unilateral left-hand lighti for classrooms is universally recommend and adopted.

Bilateral lighting is not to be reco mended, on account of its forming dou shadows; it is prohibited in ma countries, and generally condemned by Continental authorities and hygienists. is only approved by certain authorities, a then conditionally upon the light from t right-hand being differentiated in exte

Equi-bilateral combined with rear lig ing, whilst overcoming the obections bilateral lighting alone, results in extra gance in building cost and waste of pl ground area in planning, and cannot the fore be recommended on grounds economy.

Such authorities as Cohn, Javal, Gariel, Truc, and others agree that to secure good ighting, each desk (photometrically neasured) should have from 10 to 20 lux or metre candles, with a fixed minimum of to lux, but with a higher minimum of 15 ux for classrooms devoted to the purposes of sewing, drawing etc.

The generally accepted rule of the winlow-glass area in relation to the floor area s in the proportion of 1 to 5. This rule ias been applied to English schools for nany years, but under different conditions rom those obtaining on the Continent—hat is, to classrooms containing four and ive rows of dual desks—whereas those in he Continental schools have, as a rule, nly three rows.

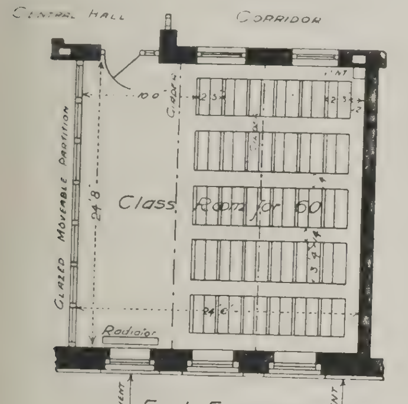


Fig 1. England

By the use of this proportion, a fair re-ılt is obtained where the room does not xceed 18 ft. to 20 ft. in width, provided ıe windows are of sufficient height to comly with the known conditions that the ıngent of the angle subtended by the top f the window with the bottom of the pposite wall is not less than half. This, owever, in itself, is inadequate, as it deals nly with the angles of incidence; the more nportant point, namely, that of light innsity, must be considered conjointly ith it.

Herr Engelbrecht, State Inspector of erman schools, has found that the ratio 1 to 5 is correct for a classroom 6 metres ide, and from that law that the intensity illumination diminishes inversely as the uare of the distance from the source, has further shown that the window area quired for a classroom—say x metres de—can easily be determined; for the quired factor will be ⅕ × the ratio, x^2 to ; that is

$$f\frac{F}{5}\cdot\frac{x^2}{36}$$

ıich, transposed into English units of easurement, gives

$$f=\frac{F}{5}\cdot\frac{x^2}{387}$$

ıere f = window-glass area in square feet,
F = given floor area in square feet,
x = width of classroom in feet.

This rule, which Herr Engelbrecht pubıed in 1905, appears to have led to very isfactory results in its application, and ts made during the present year in Hanr have given further proof of its reliaity.

Applying this rule to the classroom wn on Fig. 1, we have floor area F = ft. 8 in. × 24 ft. 6 in. = 604. The depth lassroom x = 24.66 ft. Substituting these ues in the above formula, we have :—quired window area :—

$$f=\frac{604}{5}\cdot\frac{24{\cdot}66^2}{387}=$$

.8 sq. ft., or approximately one-third of the floor area. From this it is evident that the usual ratio of one-fifth cannot be applied to a classroom of this depth. It further points to the advisability of adopting the shape of the classroom shown in Figs. 2, 3, and 4, where it will be found by the above formula that the required ratio works out to the more reasonable value of one-fifth.

In modern schools of the pavilion type, where the upper portion of the classroom is partly contained in the roof, with a large window carried up to the highest part of the ceiling level, and the side windows, by reason of the angle being at a lower level, the deficiency in effective light area is more marked. This has been overcome to some extent by providing supplementary right hand lighting by means of borrowed lights, which do not supply that quality and direction of light necessary for efficient study, and on dull days are practically valueless. Not only are the known rules of lighting not complied with in these cases, but there is also a loss of light by reflection which might be obtained from light-coloured opposite walls. Moreover, these supplementary windows are a contributive cause to the resulting "noisy" school.

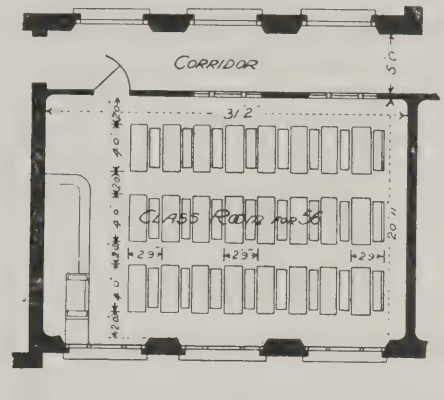


Fig 2 - France

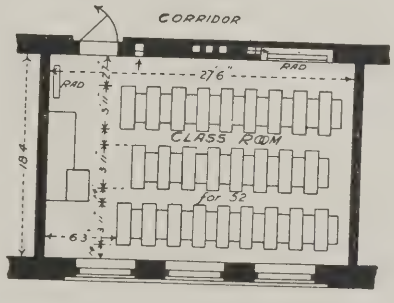


Fig 3 Germany

Artificial.—The artificial illumination of elementary school classrooms has not hitherto been considered of much moment; but in view of the increasing demand for the use of schools in the evening, and the possibility of compulsory continuation classes, the necessity for a consideration of present methods of lighting, such as naked bat's-wing burners, incandescent gas, and electric bulb pendants, is apparent.

Dr. Bishop Harman, in a recent paper on "The Artificial Lighting of Schoolrooms," read at a meeting of the Illuminating Engineering Society, offered suggestions which deserve careful consideration. These suggestions and the exceedingly valuable ensuing discussion form a basis on which some definite conclusions may be drawn, and which, summarised briefly, are as follows :—

1. The rules of left-hand lighting should be observed in that portion of the room occupied by the children.

2. Complete absence from the glare of inconveniently placed or imperfectly shaded light is essential.

3. No unscreened, unduly bright source of light should be visible in the direct line of sight from the desks or from the blackboard.

4. An illumination of at least 3 foot-candles is desirable, and in some rooms 4 to 6 foot-candles should be provided.

5. Special attention should be given to blackboard lighting by lights completely screened from the eyes of the scholars.

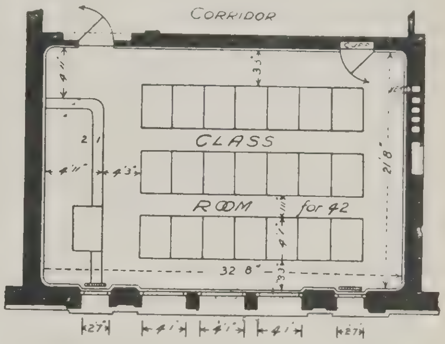


Fig 4 Switzerland

As to the relative methods of the various illuminants (oil, gas, or electric light) it is not within the scope of this paper to treat. The illuminant will doubtless be a matter of local consideration. But whatever the description of lighting employed, the principles or methods of (a) indirect illumination by reflection from the ceilings, adopted in several London institutions and in some of the newer German schools, and (b) refraction of light by (1) prismatic shades, and (2) prismatic bowls, where used for electric light, appear the best to be recommended for school purposes. The value of light, photometrically measured, of distributed illumination gained, and economy in cost of installation and maintenance, should be considered together when selecting the illuminant.

6.—*Ventilating and Heating.*

Recent investigations are convincing and conclusive that some means of "through" or "cross" ventilation by ample natural perflation, obtained by external windows, is absolutely essential for perfectly ventilated classrooms.

Through ventilation, however, has not been advocated or adopted on the Continent to any degree, nor after the manner seen in many of our recent schools, which have been designed with this object in view. But a means of obtaining through ventilation, although not direct to the external air on the one side, has been attempted by placing centre hung or swing windows at a point as high as possible in the corridor wall side of the classroom. The corridors being of ample dimensions and supplied with large windows to the external air, such corridors become large fresh-air ducts, or foul-air ducts, according to circumstances. While this system would not provide the frequent air flushing aimed at in some of the newer schools in this country, with bilaterally placed external windows, it is claimed that a sufficient replenishment of the air of the classroom is effected, whilst avoiding the excessive draughts and additional cost for heating incurred by the newer English "through ventilation" method.

Heating.—Heating by means of steam or hot-water radiators has not entirely supplanted the open fireplaces in classrooms, but the central system of supplying heat is one which should be recommended for all school purposes, having regard to (a) the difficulty of satisfactory planning of fireplaces, (b) the saving in cost of caretaker's labour, (c) the nuisance and danger from dust and from fire, which are objections always present in the case of open fire-places. Properly screened open fireplaces, in addition to the other means of heating, should, however, always be provided for the babies' room.

MR. E. T. HALL ON NATIONAL SANATORIA.

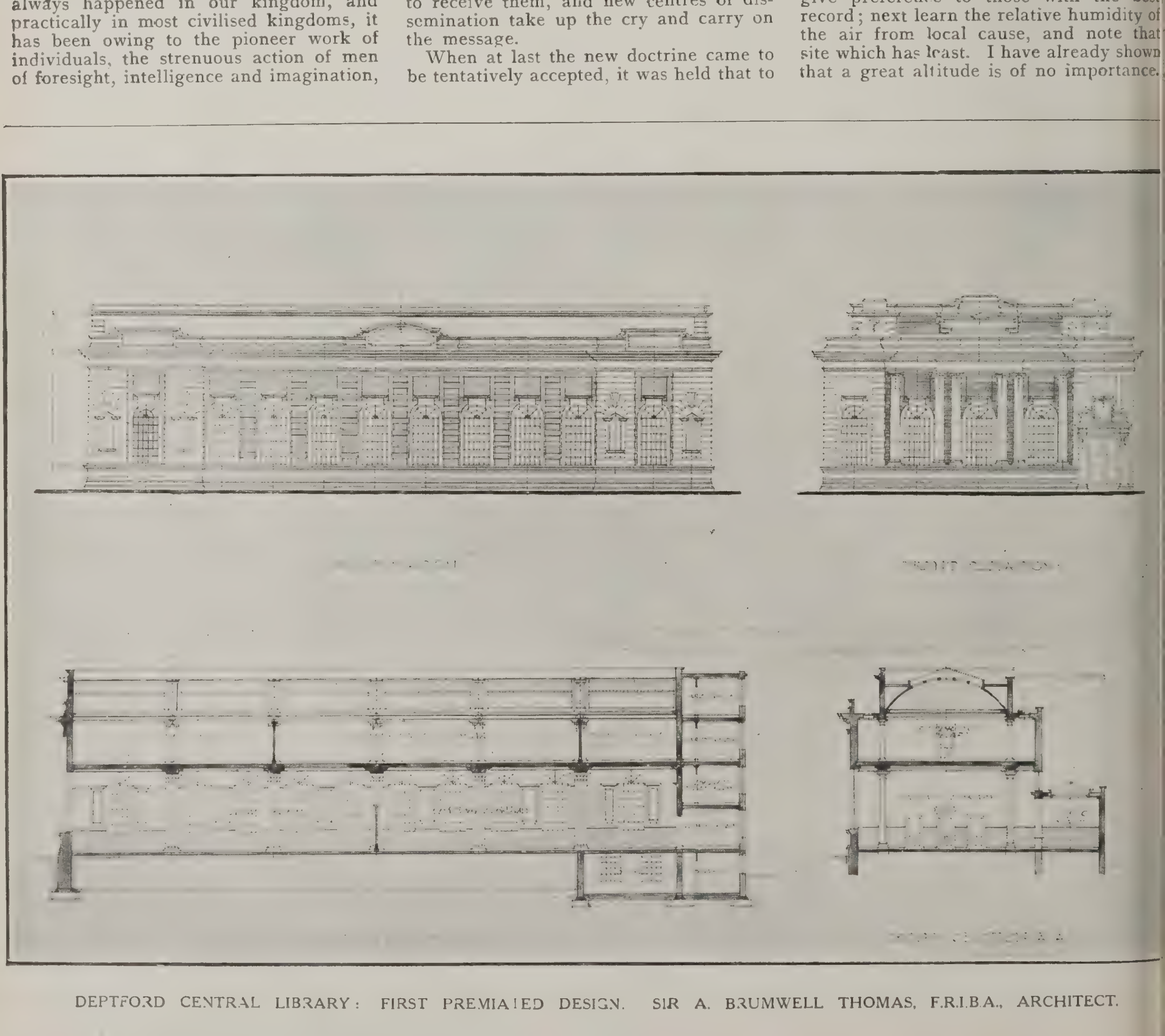
Lecturing on the subject of "National Sanatoria," in the Municipal Technical Institute, Belfast, Mr. Edwin T. Hall, F.R.I.B.A., said: For the first time in the United Kingdom the provision of sanatoria as one of the means of dealing with tuberculosis is proposed to be recognised as a national obligation, where hitherto it has been left to private charity. As has always happened in our kingdom, and practically in most civilised kingdoms, it has been owing to the pioneer work of individuals, the strenuous action of men of foresight, intelligence and imagination, who, by their success in that to which they have put their hands and brains, have demonstrated the soundness of their judgment, that all great advances have been made, whether in founding colonies, in developing great industries, in the domain of science and art, or in attacking the insidious enemies at our door, such as disease, squalor, and insanitation. "By their faith ye may know them," their purposeful belief in the means to a great end, based on the observations of causation and effect, or reasoned analogies, on logical deductions, backed by an energy which has cried out for new or wider fields for their talent, time, and opportunity.

In the domain of sanitation, prejudice, apathy, the deadly conservatism of habit, and the fear of innovation, have had to be overcome. The sanatorium, in a nutshell, is the embodiment of the root idea of open-air treatment under medical supervision. It is strange nowadays to find that although the necessity for this open-air treatment has been insisted on by apostles of health at intervals over centuries, and more persistently in the eighteenth and nineteenth centuries, their gospel was for a long time unheeded or ridiculed, they were as "voices crying in the wilderness." But such voices were not lost. They create wave-sounds which, however attenuated they may appear to become, fall here and there on ears that are attuned to receive them, and new centres of dissemination take up the cry and carry on the message.

When at last the new doctrine came to be tentatively accepted, it was held that to make it efficacious patients should be located on mountain tops at altitudes where it was said no tuberculosis existed, and the first sanatorium was erected at Gorbersdorf, in Silesia, in 1854. This presumption, however, was found to be inaccurate, and it was shown that altitude had nothing to do with the disease. Happily so for all of us in the United Kingdom. It is now demonstrated that any site on a suitable soil that is sufficiently elevated for good drainage, for prospect, and for openness, is suitable for a sanatorium, provided it is not too exposed.

What is a sanatorium? It is a residential school of hygiene, where patients in the early stages of tubercular infection are taught primarily to take the fullest advantage of open air and sunlight, and to regulate their lives in certain ways—as to hours of rising, eating, resting, working, and sleeping, that disease may be eradicated, that vitality may be stimulated, that energy may be renewed, that the subject may came out a healthier, stronger, and better citizen, and, when he comes out, that he may exercise the influence of his first-hand knowledge and disseminate the lessons he has learned.

There is much to be considered in the selection of a site for a sanatorium. First of all, in considering competing sites, ascertain the average number of hours of sunlight to which they are subject, and give preference to those with the best record; next learn the relative humidity of the air from local cause, and note that site which has least. I have already shown that a great altitude is of no importance.



DEPTFORD CENTRAL LIBRARY: FIRST PREMIATED DESIGN. SIR A. BRUMWELL THOMAS, F.R.I.B.A., ARCHITECT.

at is important is that the site shall be n to the winds of heaven—that is to , that there shall be free currents of all round and through the buildings, there shall be abundant access for sun- t, that it shall be cheerful. To attain se ends, the site should be elevated ve the land to the south, and on the ler sides it should be protected. But e a note of warning is necessary. By ny a dense belt of woodland close up to building on the northern and eastern es has been encouraged. That is a take. I know of one of the largest and st important sanatoria on a beautiful , with a magnificent panorama to the th, where the trees were so dense on other sides that the buildings were nid, the general air stagnant, and fun- abounded. Trees should be cut back a considerable distance, and avenues uld be made through them to allow at rivers of air to sweep through and und the buildings. In the quoted case dvised these alterations, my advice was pted, and the marked improvement has re than justified our expectations.

ncidentally, I have referred to prospect. is is of great importance. Shut in by ods or other limitation of panorama, a ling of depression is engendered, which greatly to the detriment of patients. tensive views, on the other hand, aden the outlook not only of the sical eye, but of the mental vision. e play of light and shade, the kaleidoscopic changes of the clouds, affecting the colours in trees and herbage; the movements of man and beast and bird, of distant ship and of storm—all are helpful, interesting, and stimulating to the sick and weary. Walking exercise is essential to the treatment of patients, and a considerable area of site is required for exercise where there is no open country with public common or uplands. In any case, however, there should be ample area for agricultural and other manual work. This treatment is superseding the older treatment where patients were allowed to idle the whole day and to be fattened up. The sanatoria which pursue the other course, of providing and initiating the desire to work, not only produce the best cures, but are doing a great economic service to the patient and to the community. The lecturer concluded by laying before the meeting general principles of design and arrangement of certain sanatoria and the cost of different structures.

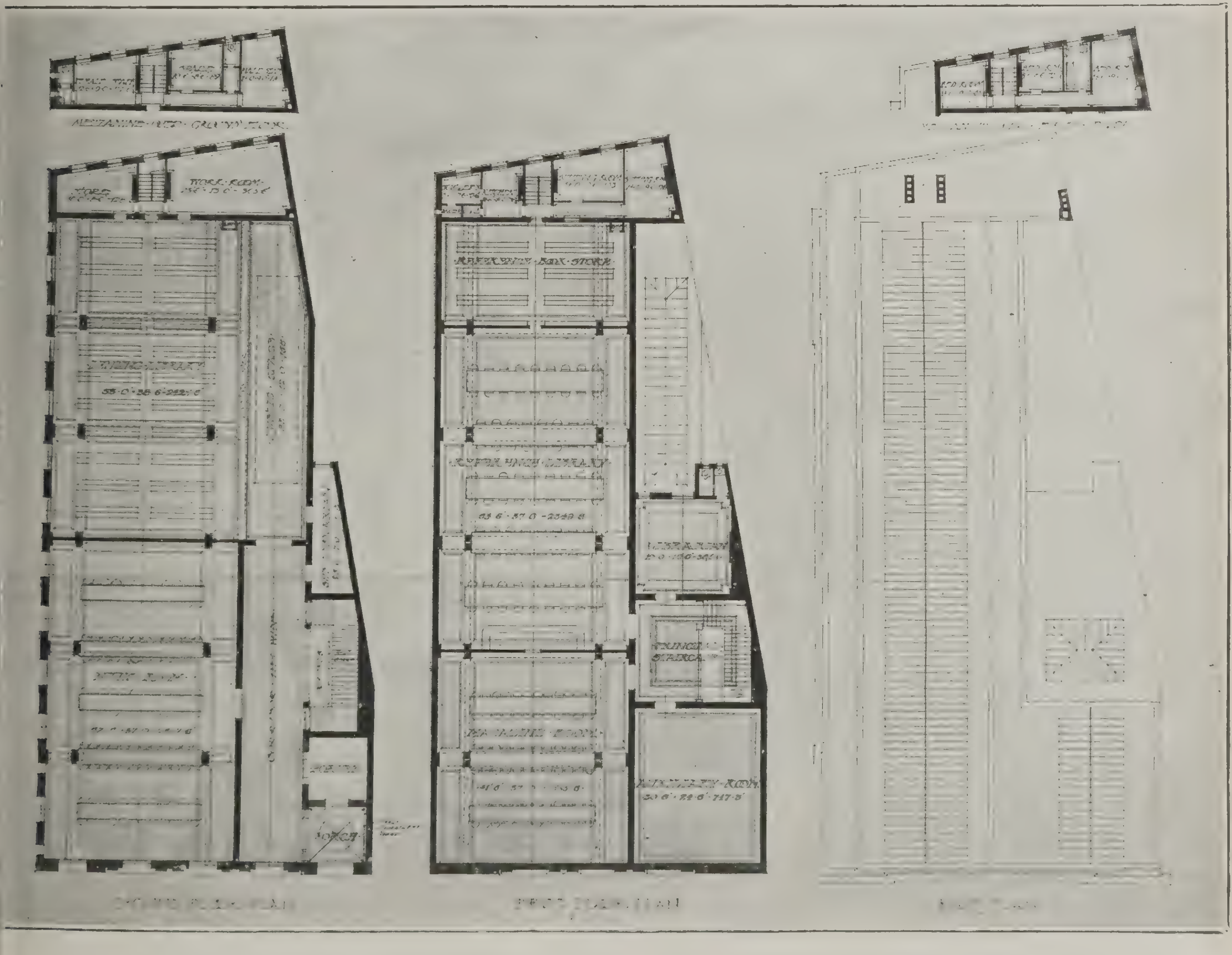
A curious difficulty has arisen with regard to the building of an elementary school for Hampstead Garden Suburb. There is diversity of opinion as to whether the school should be of one storey or of two storeys. While the question is in abeyance, the children have to walk a mile and a half to school, and their parents have threatened to strike against sending them.

IN PARLIAMENT.

(*By our Press Gallery Representative.*)

King Edward Memorial.

In the House of Commons last week on the report of the vote for the Office of Works, Captain Murray called attention to the proposal to place a memorial statue to King Edward in the Green Park at the Piccadilly end of the Broad Walk. He wanted to know whether the Government were prepared to give their assent to that site. He said there was a strong body of opinion against the policy being pursued in regard to the erection of statues within the boundaries of Royal parks. He could not agree that the site selected for the King Edward Memorial Statue was a good one, as he believed a statue at the Piccadilly end of the Broad Walk would shut out the view of the Queen Victoria Memorial. The other objection was that a tree at the end of the Broad Walk would have to be cut down. There had been many trees cut down in the Royal parks, and though others had been planted they had been planted in long rows, whereas the trees they supplanted gave that rustic and rural appearance which they all desired. It was part and parcel of the policy of the Office of Works to meddle with the Royal parks. Some definite policy should be adopted in regard to the erection of statues in Royal



DEPTFORD CENTRAL LIBRARY: FIRST PREMIATED DESIGN. SIR A BRUMWELL THOMAS, F.R.I.B.A., ARCHITECT.

parks, which people desired to preserve as national parks with the rural amenities which they at present possessed. Mr. Hoare supported Captain Murray, protesting against encroachments upon Royal parks. He was opposed to the erection of memorials in those parks. Mr. Noel Buxton, while against encroachments upon Royal parks, said there existed a desire not only for a worthy architectural memorial to King Edward, but also some other memorial. He favoured the Shadwell park scheme. With regard to the proposed statue he thought that in this case, and in the case of the erection of public buildings, the advice of experts in the modern science and art of town planning should be obtained. The Hyde Park Corner proposal deserved consideration. Hyde Park Corner was somewhat of an eyesore and a scandal in these days, and some opportunity should be taken to improve it by providing what he thought was by far the best site for the statue of King Edward.

Mr. Dudley Ward, replying on behalf of the First Commissioner, said the proposals for the King Edward Memorial were so little advanced that a discussion at present was hardly profitable. The Government was not concerned with the memorial. It was a memorial to be erected by funds raised by the people of London. The difficulty of the Memorial Committee was to find a suitable site, and he believed every suitable site had been examined by them. The number, he believed, had been reduced to four—two in Trafalgar Square, one in Waterloo Place, and one in the Broad Walk. They were all objected to. He believed the Broad Walk site in the Green Park was the one least open to objection. The Prime Minister had already stated that the Government would raise no objections subject to the approval of the plans. If the statue was placed there it should not be too large, and he agreed that the more money they spent on the statue the less money would be available for the park in the East End. The only reason the Government could give for refusing that site for a large statue would be that it would hide or compete with the Queen Victoria Memorial. He agreed that the statue should not encroach upon the park. Members had made too much of the encroachment upon the park. The Broad Walk was 65 ft. broad, and they could put even a very large statue within 65 ft. The pedestal of the statue of the Duke of Cambridge in Parliament Street measured 8 ft. by 14½ ft. In the middle of the Broad Walk a statue of that size would not be much encroachment upon the Park, and it would not be an unworthy statue. As to the feared destruction of one tree, he was sorry Captain Murray had an affection for that particular tree, because it was dying. While the discussion of the Hyde Park Corner scheme would not be in order he reminded the House that considerable portions of the Green Park had been thrown into the roadway to relieve congestion of traffic. The present arrangement was as good as could be desired for the relief of traffic. The proposal now was to put part of the park into the same state as it was before the alterations of 1883 and 1902. If the traffic was congested in 1882 it must be far more congested at the present time. Discussion on this point, however, would be hardly profitable. He repeated the assurance that nothing would be done either in the Recess or before plans were submitted to Parliament.

Mr. C. S. Price called attention to what he described as a defect in the Queen Victoria Memorial. He said the Scottish quartering was defective. He also suggested that a belt of trees should be planted in the King's Park near Holyrood Palace, Edinburgh, in order to screen some tenements.

Mr. Ward replied that the planting of trees at Holyrood was engaging the attention of the First Commissioner. He was not aware of the defective quarterings on the Queen Victoria Memorial, but he would have the design examined.

NEW TRAINING COLLEGE, DUNDEE.

For the new Provincial Training College and Practising School which are about to be erected for the St. Andrews Provincial Committee for the Training of Teachers in Park Lane, Nethergate, Dundee, to the north of Harris Academy, the area of the site extends to about 1¾ acres, the main frontage to Park Place being 123 yards; the east boundary going along the line of Temple and Artillery lanes. The plans, which have recently been approved by the Scottish Education Department, provide for both buildings being four storeys in height.

The ground floor of the buildings, which is semi-basement, and has a separate entrance for students, is utilised for men's and women's changing rooms, lavatories, etc.; 2 gymnasia, with dressing-rooms and spray baths, wood and metal workshops, and large dining-room with kitchen offices, etc. The first floor, which is also approached by an outside stair from Park Place, has an entrance hall which will be also utilised as a crush-room for the Assembly Hall, which is situated immediately to the back, and which will accommodate about 600 students, the whole administrative department as well as museum, library, and rooms for private study, being also placed on this floor. The second floor is entirely occupied by class-rooms, class criticism rooms, lecture-rooms, as well as suitable men's and women's common-rooms; while the third floor is set apart for 2 laboratories, nature study room, 2 lecture theatres, art-room, and rooms for needlework, cookery, laundry, and domestic science.

For the convenience of the staff as well as for students and school pupils, the college buildings are connected to the practising school by a covered bridge at the level of the class-room floor. The plans of the practising school, which, in the expressed opinion of the Education Department's architect, are compactly and well arranged, provide accommodation for 40 pupils, and are considered perfectly ampl for all the purposes of a fully equippe secondary school, the most recent require ments as to school staffing and size o class-rooms being kept in view. In th school it will also be possible to demon strate the methods of school training an teaching from kindergarten to the highes grade of the secondary school. The groun floor is occupied by the kindergarten an infant departments, as well as by an as sembly hall designed to accommodate th pupils of the primary and secondar schools at separate times, while the firs and second floors are set apart for clas rooms, physical and chemical laboratorie music-room, library and museum, th third floor being occupied by art-room clay modelling and nature study rooms, large part of the flat roof at the bac being also utilised for nature study, con servatory, and recreation purposes. Ampl cloak-room accommodation is provided f the pupils of the primary school an changing rooms for pupils of the secondar school, while rooms for the headmaste headmistress, and staff are also con veniently planned.

The aim in treatment of the elevatio has been to secure a dignified academ note in harmony with the purposes f which the buildings are designed and accord with their close proximity Dundee University College.

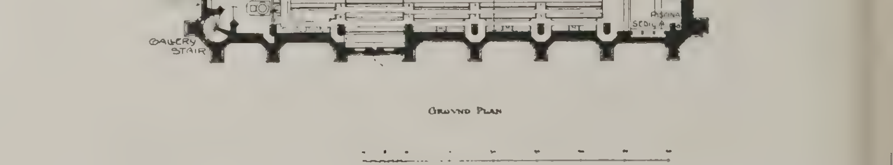
The estimated cost of the scheme about £60,000, and as the villas that occ pied the site are already partially dem ished, it is expected that building oper tions will be begun at an early date.

The architect is Mr. T. Martin Cappo F.R.I.B.A., 32, Bank Street, Dundee.

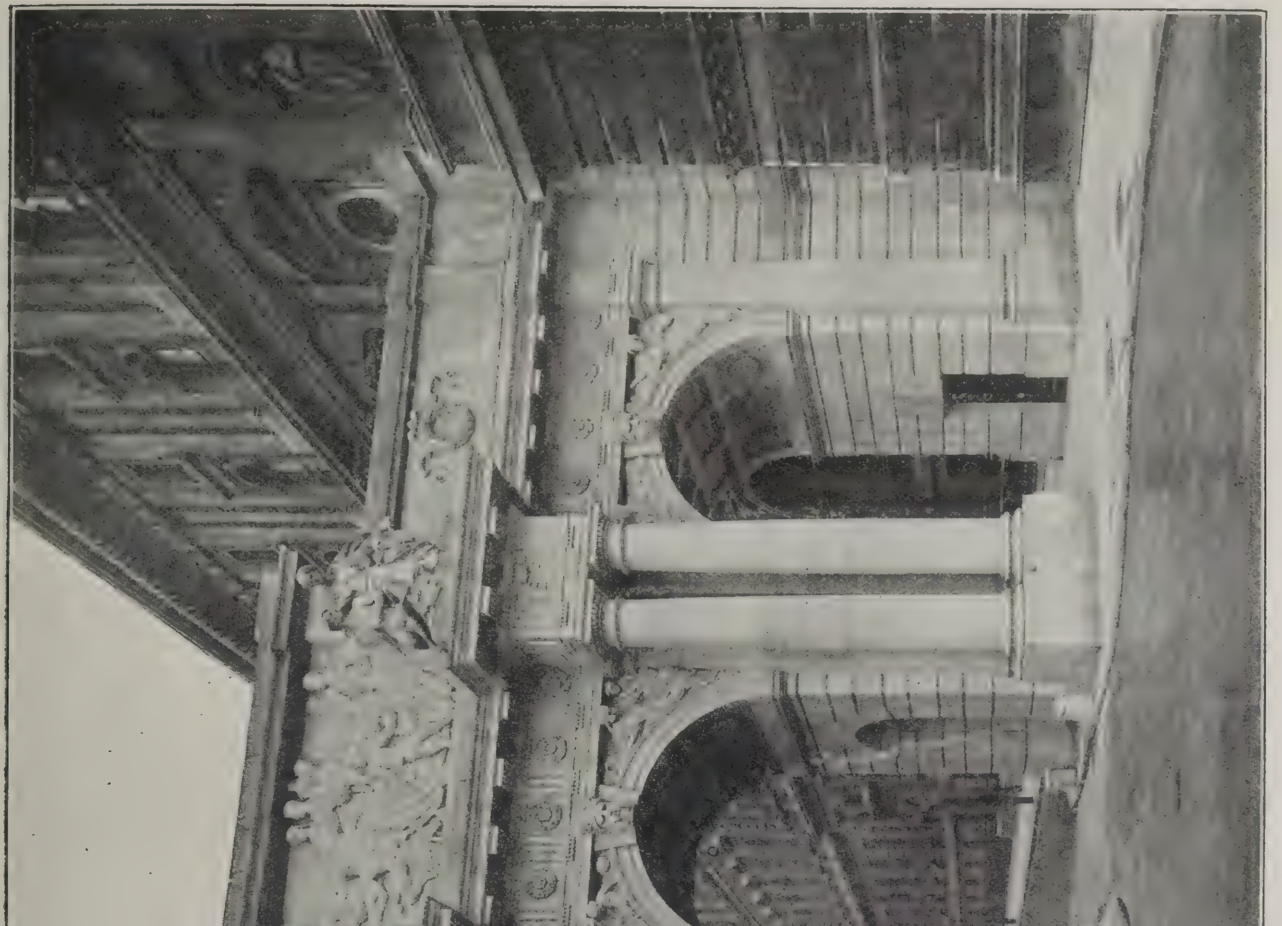
OUR PLATE.

Barnard Castle N.E. County School.

This building, which forms the su ject of our centre plate, is faced externa with Stainton stone, and the internal dre ings are of the same material. It is roof with Precelly slates. At the west end the is a gallery above the ante-chapel, which the organ will be placed, and the is a small gallery on the north side accommodate the organ console. The s fronts are being prepared by the boys the school workshops, from the archite design. The contractor for the work Mr. Robert Wilson, of Barnard Cast The design was exhibited at the Ro Academy this year. (Mr. W. D. Car architect.)



THE NEW CHAPEL AT THE NORTH-EASTERN COUNTY SCHOOL, BARNARD CAST
W. D. CARÖE, F.S.A., F.R.I.B.A., ARCHITECT.
(See Centre Plate.)



BRIDGE BETWEEN THE NEW PUBLIC OFFICES, WESTMINSTER, AND THE HOME OFFICE. THE LATE JOHN BRYDON, ARCHITECT. PAUL R. MONTFORD AND W. S. FRITH, SCULPTORS.

(See "*A Notable Example of Architectural Sculpture,*" *page 192.*)

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

CORRESPONDENCE.

An Experience of Reinforced Concrete Offices.

SIR,—At the present moment, when ery architect is wondering if the days brick and stone are numbered, perhaps ew lines from one who has worked for last month in a reinforced concrete ilding may be of interest. The Royal ver, into which I migrated, is one of largest office buildings in England; in t, it is expected to earn £35,000 a ar in Liverpool, where office rents are t excessive. The building being on an and site, about two-thirds of the offices e outwards. My office, however, is one those lighted from an area, where the hitect, Mr. Thomas, had an absolutely e hand in obtaining the maximum of ndow with the minimum of wall. The n of the outside wall somewhat resnbles that of a 15th century church, in it the piers are at right angles to and parallel to the wall. This point is at e apparent to callers, who are struck the great size of the windows and the nderful amount of diffused light; but piers, being internal, rather interfere h the desks and furniture.

oncrete as a fire resister is well known, I had not realised that its power as a nconductor would be perceptible against t month's abnormal sunshine; yet all o have worked in or visited the office ee that the temperature has been ightful, even on the hottest days.

he second characteristic of concrete is an advantage. Every floor and wall ms to act as a telephone, at any rate, ere vibration and noise are combined. e sound of a hammer will spread ough many walls and floors, and can felt at an extraordinary distance; and a few inches of concrete are impeneble by the human voice.

inor points for and against concrete the speed with which it dries, and the iculty of securing plugs.

n selecting an office, an architect has consider in how small an area (which my case meant 20s. per yd. sup.) he place the requisite number of drawing boards, lighted from the left. I required space for five drawing boards in addition to my own, and a vestibule, plan room, and a room for typing and letter filing.

The accompanying sketch shows that a frontage of 35 ft. 0 in. and 74 sq. yds. of floor area were needed.

HASTWELL GRAYSON.

Liverpool, August 4th.

The Late E. A. Abbey, R.A.

SIR,—May I be allowed a little space in your next issue to dissent from your estimate of the work of the late E. A. Abbey, R.A.?

I hold it as an unaccountable error of judgment to refer to that great arstist's black and white work illustrating Shakespeare as showing "so little ability"; and an equally unaccountable ignorance of fact to refer to those drawings as consisting "chiefly" of "pen sketches of Shakespeare's characters." The black and white drawings illustrating Shakespeare are mostly of scenes, not "characters," vividly seen by an imaginative mind, and conveyed to the world by an exquisite yet masculine gift of draughtsmanship rarely equalled in the whole history of art. So full of fact, vitality and dramatic force are these drawings that they have laid students of Shakespeare under a great obligation to their author.

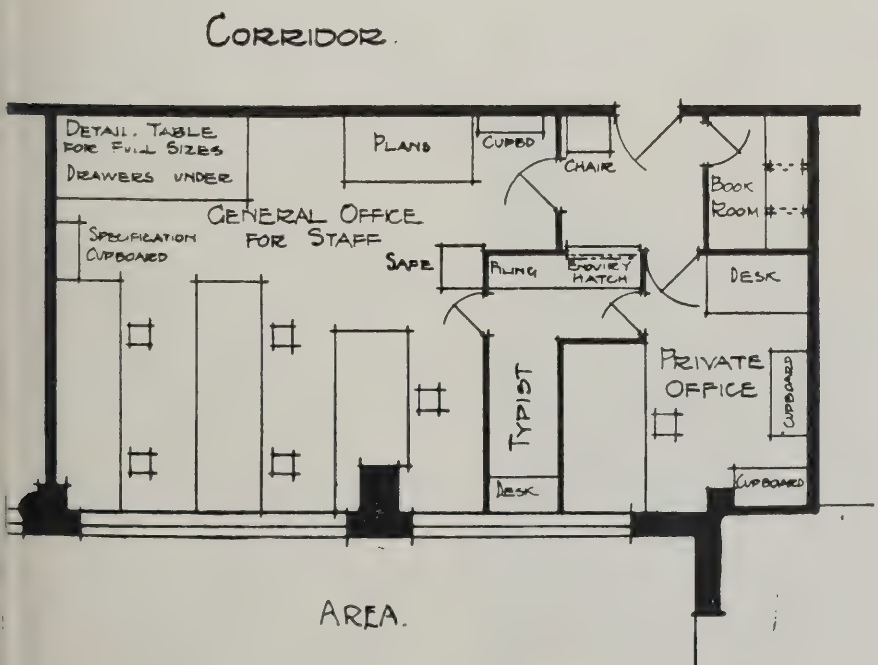
It is a mistake to imply, as your article does, that Mr. Abbey made his Shakespeare drawings to accompany the essays in the plays that appeared with them in "Harper's Monthly Magazine." The drawings were the direct product of the magical writings of the great poet operating upon a kindred poetic spirit, which in turn expressed the dramatic ideas in pictorial form through the medium of a most scholarly artistic faculty.

I should have expected (and in your case the omission is unpardonable) from an architectural journal some enthusiasm for the beautiful and discriminating choice of the architectural settings in many of Mr. Abbey's drawings, notably perhaps those illustrating "Much Ado," "Timon" and "The Winter's Tale." I note also the omission of all reference to his historical research in costume and furniture, which must have been colossal; and the omission also of all reference to the delicate and dexterous skill with which he so unobtrusively interwove those things into his themes as to produce a whole of winning interest and romantic charm which current students of his work love to dwell upon.

I could say much more, for your article gives a start to many reflections upon the part journalism does play, and might play, in the cultivation of public taste in matters of art, but time is not available. I must content myself with having said a word or two in defence of the more charming and more imperishable artistic expressions of a great artist.

JOHN M. MACFARLANE.

[Mr. Macfarlane's enthusiasm is very delightful, but seems to suggest that nothing but whole-hearted praise of a favourite artist would satisfy him. A responsible journalist, however, may not thus entirely suspend his critical judgment, even when the subject is so deserving of high admiration as was, undoubtedly, the late Mr. Abbey. Mr. Macfarlane, in his charming loyalty to his hero, seems to have overlooked the almost lavish praise implied in several passages which appear in the notice with which he finds fault. The critic said, for instance, that "the death of Mr. Abbey is a great loss to English art"; that what he could do in oil-painting was first shown "triumphantly in his remarkable picture of 'The Duke of Gloucester and Lady Anne,' which took the public by storm at the Royal Academy Exhibition, and was almost a new indication of how historical painting might be combined with a quite dramatic realism"; that "in the illustration of 'O Mistress Mine' he invented a woman's face of a haunting quality of expression such as has seldom been seen on canvas"; and finally there is the handsome tribute to Abbey's "remarkable talent for treating historical and industrial subjects in a manner at once poetic in suggestion and decorative in effect." Surely no higher praise could be given or should be demanded.—ED.]



(See "An Experience of Reinforced Concrete Offices.")

DETAILS, OLD AND NEW.—XXII

Cupola at Woolhampton Stables.

The lantern from Woolhampton surmounts a quiet flat brick façade, typical of 18th century work. It is square in plan, like the splendid examples from St. Paul's and Chelsea Hospital, a figure less usual than the more complicated geometrical one, the octagon. The latter form seems the logical one with which to surmount a dome; but, after all, it is so easy to change from the octagon to the square that any type of plan may be adapted for any situation. In the example from Woolhampton, the corners are designed to show coupled pilasters, which, by necessitating the returns right through the mouldings of the entablature, makes the angle projection of the cornice less than it would otherwise have been. Coupled ball-finals are placed over each corner, which hide the springing of the ribs of the little lead dome, and give a pleasant interest to it. The dome is square, and is finished with a boldly modelled finial, which supports the weather vane. And this, with its dancing banneret and lettered indications "of all the airts," and fanciful scrolly ironwork, is not the least charming part of the composition.

J. M. W. H.

CONSTRUCTIONAL WORKS ON A PRIVATE ESTATE.

BY F. SOUTHEY, Assoc.M.Inst.C.E.

VIEW OF LOWER LAKE SHOWING VALVE TOWER AND OVERFLOW WEIR.

The following short description of the constructional works that have been carried out on a private estate may be of interest because of the introduction of certain original features.

The estate is situated on a site that is well-wooded and somewhat hilly. It commands an extensive view westwards, and Hindhead may be observed towering out of the southern landscape.

The park itself comprises about 450 acres, and is surrounded by a stone wall. The geological formation on which it stands is the Upper Greensand, which provided much of the stone that was so largely used for constructional purposes.

A stream entering the park on the south side helps to feed the lakes, but springs rising in the estate form the chief source of water supply.

A description will first be given of the formation of the lakes, which at the present time constitute the most marked feature in the park. Originally a few trout ponds existed, and these, it is stated, were at some period worked commercially. Now in their place three large lakes are to be seen situated at different levels.

The upper lake, of about 11 acres in extent, supplies water through a cast-iron main, 18 in. in diameter, and about half a mile long to the middle lake, whence the water descends over a cascade with a fall of nearly 20 ft. into the lower lake, a magnificent expanse of water some 14 acres in area.

To create these lakes, dams of some magnitude were built across the valleys, one being 400 ft. in length and rising 30 ft above the bed level. They were formed of selected earth punned in layers with puddled clay cores, and suitable valves control the outlet of water in all cases, valve towers being erected in the upper and lower lakes.

The inlet of the water to the middle lake at the end of the 18 in. pipe previously mentioned, is through the mouth of the head of a dolphin (p. 187), executed in Carrara marble. This piece of sculpture weighs about 30 tons, and had to be specially transported by road from Southampton. The middle lake was designed for boating and skating, the greatest depth of water being somewhat under 5 ft. In this lake a picturesque bathing-house may be seen. The lower lake is the largest, and contains several novel constructions. Foremost of these is the "submerged chamber."

The accompanying views convey an accurate impression of its appearance. The chamber is in plan a polygon of 16 sides, and is constructed of cast steel ribs and iron framing, with glass panels one inch in thickness. It is 18 ft. in diameter and 13 ft. high at its apex, and is approached from the road by a descent down a circular stairway, and through a cast-iron tunnel about 100 ft. in length. A vent pipe is taken through the apex of the chamber. The floor of tunnel and chamber
is paved with mosaic, and the figure
Neptune surmounts the latter. T
normal water level in this lake is gover
by the sill of the weir near the va
tower, and is just over the top of
chamber. The objects of an aquarium
here to a certain extent be supplied. T
chamber is a cool retreat in the hot d
of summer, and one has the fascination
a novel experience while inside it.

A continuation of the tunnel from
outer side of the chamber leads to a str-
ture in concrete, also under the level of
water, and intended to contain a mu-
plicity of pipes, valves, and other appara
for the operation of an electric fount
This, however, was never destined to
light its beholders with its kaleidosc
effects on particles of water in motion.
its instalment was countermanded du
the time of construction, and the cham
was converted to another use.

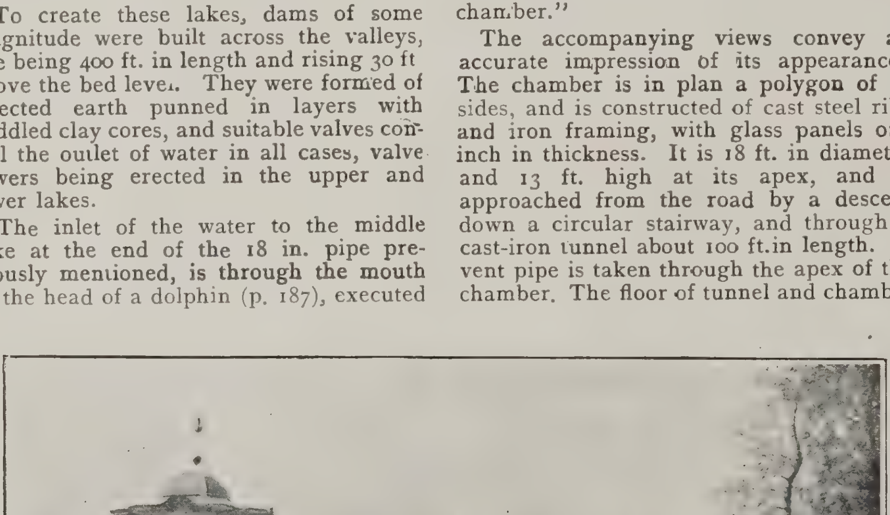
Another novelty is what was ge-
ally known as the "grotto." This is
structed entirely of concrete. From
lake a boat can proceed along a tunnel
ft. long, and its occupants disembark
find themselves in the representation
cave or grotto A circular inclined
leads out on to the ground above, w
a central flue 3 ft. in diameter serves
ventilator. A rockery was formed aro
the tunnel entrance.

The valve tower with bridge lea
thereto lends some attraction to a corne
the lake. In this tower the head of w
is utilised to drive a turbine and se
three-throw pumps for forcing the w
through a 5 in. rising-main up to a
level service reservoir, from which wat
taken for the supply of hydrants, f
tains, and other general purposes.
tower is of 9 ft. internal diameter,
about 30 ft. in height from its foundat

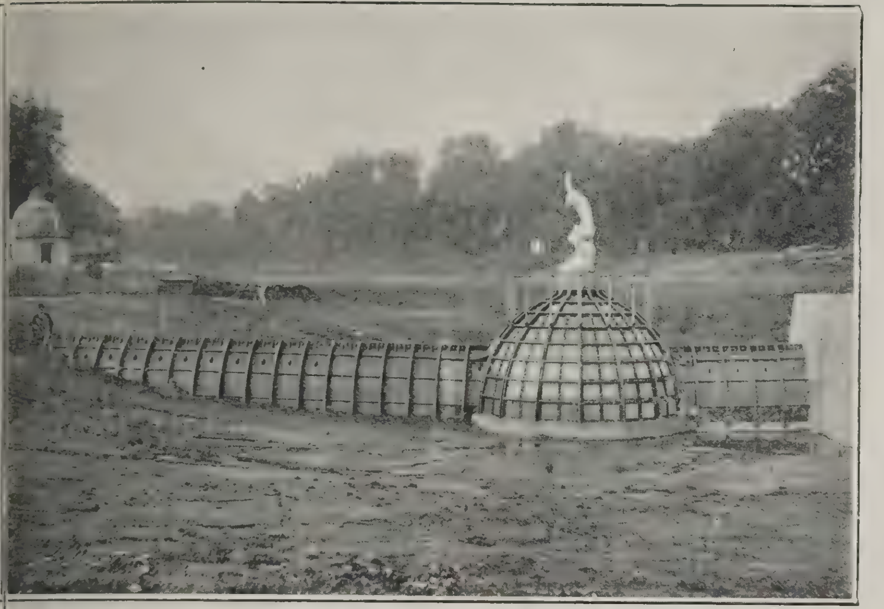
A boat-house and an artificial isl
complete the attractions offered in
lower lake.

A sewerage scheme was also laid ou
50 persons, the sewage being treate
the outfall works on the septic tank
ciple, followed by land treatment.

A unique sundial is to be seen in
stable tower. Unlike the ordinary
dial standing in an open space where
shadow of a gnomon records the hou



VALVE TOWER IN LOWER LAKE.



SUBMERGED CHAMBER AND TUNNEL AS COMPLETED.

(*See "Constructional Works on a Private Estate.*")

ay, this is placed in the building, and nage of the sun as a bright spot cast lens fixed in an opening in the wall feet in front of the dial traverses the and registers the hour of noon to n a few seconds of absolute accuracy. is means clocks on the estate can be cted to Greenwich time, a matter of importance in a country place. The ary sundial, be it remembered, is, g to "equation of time," sometimes ror as much as a quarter of an hour.

is transit sundial—as it is called—is vention of Mr. A. A. Watkins, Mem. C.E., who also acted as consulting eer for the whole of the works, and om the writer is indebted for assist- in the preparation of this article. undertakings, as will be gathered, of some considerable magnitude, giv- mployment to hundreds of workmen g a period of several years.

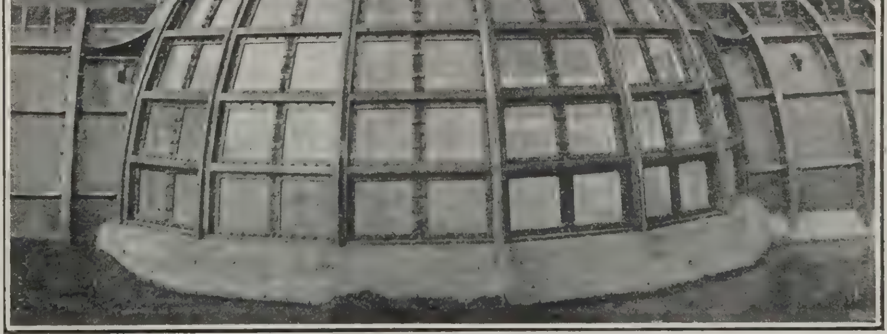
SLAG AND PORTLAND CEMENT.

Germany the war between pure Port- cement and Portland cement contain- n addition of blast furnace slag has brought to an end by the declaration e Prussian Minister of Public Works, has stated that the researches carried n accordance with his instructions of mber 21st, 1902, at the Royal Material ng Laboratory at Gross Lichterfelde, shown that Portland cement and iron- and cement are to be considered of l value, and that in so far as the Portland cement conforms to the re- ments for the delivery and testing of and cement obtaining for the time , not only as regards test-pieces d in water, but also those stored in there is nothing to prevent its em- nent in the carrying out of public s.

portant as this decision is, says a r in the Engineering Supplement of Times," it has excited but little in- t in this country, though it will doubt- ave some effect on the industry sooner ter. The question was fought out some 15 years ago with an entirely ent result. The addition of slag or ragstone was practised by several manufacturers, ragstone being the more frequently used of the two, although slag had been employed to some extent since 1880. In 1894 a meeting of cement manufacturers was called to consider what steps should be taken to deal with the question, and the outcome was the appointment of a commission under the auspices of the London Chamber of Commerce to inquire into the effect of such additions. The experts, after carrying out a number of investigations, reported that the effect was to reduce the quality of the cement. It must be observed that their researches were carried out chiefly on mixtures of cement and ragstone, but the conclusion arrived at was that the effect of slag was in every way similar to that of ragstone. In consequence of this work, the Chamber of Commerce decided that the addition of any material to cement after the burning operation, save a small percentage of gypsum, was adulteration, and as such was a fraud, unless the material was sold as an admixture. Officially the practice of adding slag was dead in this country after this decision was made public. But there is some difficulty in detecting the addition of slag, and cement to which it has been added has been marketed in this country for many years, since there is no reason to suspect the addition if the cement gives tests high enough to pass the British standard specification.

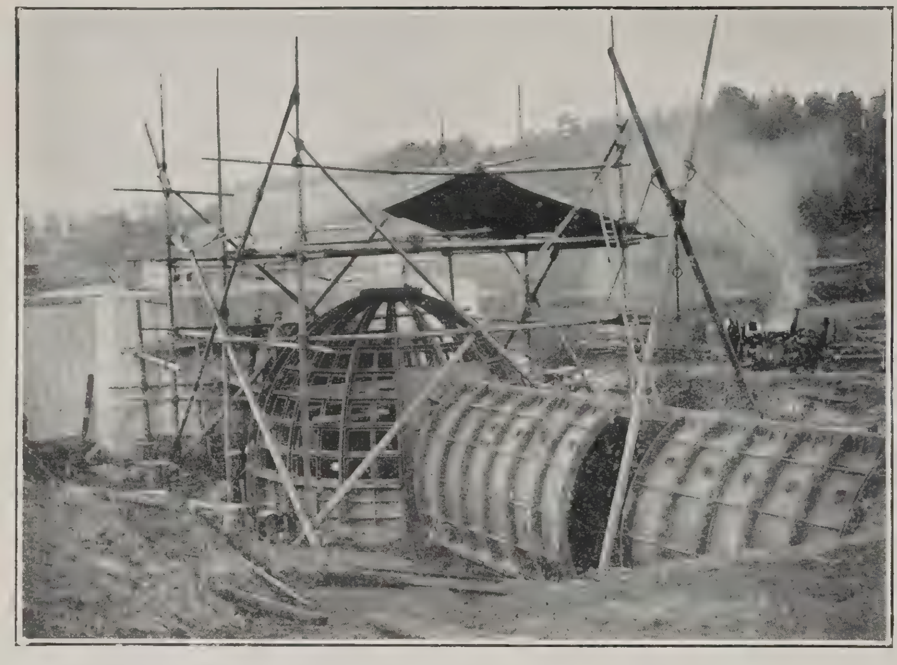
Michaelis found that the addition of puzzolana to cement improved its resistance to sea water. The sale of cement to which about 30 per cent. of slag had been added was practised by Prussing Planck and Co., and in the circulars issued with respect to this cement it was claimed that it had been improved by the addition of a material containing silica in an extremely active form. The Association of German Portland Cement Manufacturers decided to combat the growth of the practice. With this object in view, a deputation waited on the Minister of Public Works, who received them sympathetically, referred the matter to the Royal Material Testing Laboratory for investigation, and, pending the publication of the report, prohibited the use of iron-Portland cement in the carrying out of public works and the sale of such cement as Portland cement.

Lundteigen, of the Western Portland Cement Company of America, communicated a number of results to Erdmenger, which indicated the advantageous results of the addition of certain natural silicious material. But the Prussian Material Testing Laboratory failed to find that these additions had the desirable influence attributed to them. Infusorial earth, trass, and a waste product obtained in the manufacture of alum were tested, and it was found that their effect on test-pieces stored in air, moist sand, or sea water, was to reduce the strength of the cement mixtures. The effect of the addition was more pronounced in the 1 : 7 mixtures than in the 1 : 3 sand cement mortars. In the latter case the strength of test-pieces made with cement containing 33 per cent. of silicious matter was only 70 per cent. of that exhibited by the pure cement.



ENLARGED VIEW OF SUBMERGED CHAMBER.

(*See "Constructional Works on a Private Estate.*")



SUBMERGED CHAMBER AND ELECTRIC FOUNTAIN DURING CONSTRUCTION.

(*See "Constructional Works on a Private Estate."*)

Dyckerhoff's results, published in 1905, showed that certain of the iron-Portland cements exceed the tests of certain brands of Portland cement when tested in accordance with the requirements of the German Standard Specification. In 1907 Framm published the results of a long series of tests on the two classes of cement, these being the official tests of the Association of German Manufacturers of Portland Cement. The general results of his work indicated the distinguishing feature of the iron-Portland cements to be that they exhibit a lower test when exposed to air than do Portland cements.

The work of Burchartz, which is also the work of the Royal Material Testing Laboratory, has done much to dispel uncertainty. In the course of his tests the suggestions of both the Portland cement and the iron-Portland cement manufacturers received attention. His tests of mortars composed of two parts of sand to one of cement and of the 1 : 5 and the 1 : 7 mixtures did not indicate any essential difference in the behaviour of the two classes of cement/ the actual figures of the iron-Portland cements being either slightly above or below those of the corresponding Portland cement mortar. This held good whether the test pieces were exposed to air or were immersed in water, and as regards both tensile and compression tests. Experiments were carried out with the object of ascertaining whether the addition of sand had the same effect as the addition of slag, this being asserted by the opponents of iron-Portland cement; the results indicated that the addition of slag such as that used in the manufacture of iron-Portland cement did not reduce the strength of the cement in the same proportion as did the addition of sand. At the same time, the contention of some of the advocates of the addition of slag that the strength of a normal Portland cement is thereby increased received no support.

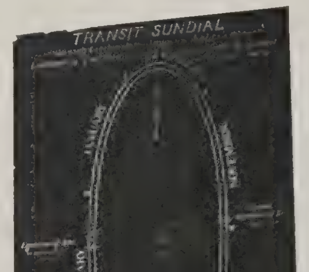
It must always be remembered that slag is a variable material. It does not remove any difficulties in the manufacture of cement, but adds another factor which needs constant attention. The neglect of the physical form and of the chemical composition of the slag employed accounts for the anomalous results obtained by many investigators.

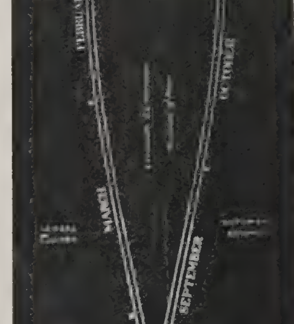
ERRORS IN CHAIN SURVEYING.

An investigation to determine the size of errors in chain surveying has been carried out by Capt. J. E. E. Craster, who has reported the results in "Engineering." The chain surveying consisted of long survey lines, measured across rough country, in all weathers. Each line was chained once only. The data for the investigation consisted of 208 lines, chained by forty surveyors. The correct length of each line had been found by trigonometrical triangulation, but was unknown to the surveyors, and in this way the actual error made in chaining each line was ascertained.

A few large errors occurred, and in most cases they were found on investigation to be due to mistakes in booking. In these cases the booking was corrected. The remainder of the large errors were due to unknown and abnormal causes. The inclusion of these abnormal errors would have spoiled the analysis, as it was intended to investigate only the causes of normal errors. For this reason all errors larger than 50 links were rejected. There then remained 196 lines, giving 92 positive and 104 negative errors.

To reduce the data to a form suitable for mathematical analysis it was necessary to group together all lines of approximately the same length, and to find the mean error of each group. The following statement shows the results of this grouping: 27 lines between 70 and 80 chains in length, mean error, 10.21 links; 32 lines between 80 and 90 chains in length, mean error 9.5 links; 23 lines between 90 and 100 chains in length, mean error 10.8 links; 34 lines between 100 and 110 chains in length, mean error 11.53 links; 21 lines between 110 and 120 chains in length, mean error 13.8 links; 30 lines between 120 and 130 chains in length, mean error 13.6 links.





THE TRANSIT SUNDIAL.

(*See page 203.*)

DEPARTMENTAL COMMITTEE ON PLAYGROUNDS.

The President of the Board of Education has appointed a Departmental Committee to inquire and report: (a) Whether it would be consistent with due regard to educational and hygienic considerations that the minimum standard of playground accommodation for new public elementary schools prescribed in the Building Regulations of the Board of Education—viz. 30 ft. per head of accommodation—should be modified or adjusted according to the size, design, or situation of schools, the proximity of recreation grounds or open spaces, the density of population, the cost of land, or otherwise. (b) How far it is possible or desirable to define more precisely the standard of playground accommodation which the Board of Education will require under the Code of Regulations for Public Elementary Schools in the case of existing schools or to regulate the practice of the Board of Education in dealing with cases in which the playground accommodation is considered to be insufficient.

The Committee will consist of—Mr L. A. Selby-Bigge, C.B., Principal Assistant Secretary of the Elementary Education Branch of the Board of Education (Chairman); Sir George Newman, Chie Medical Officer of the Board of Education; Mr. J. C. Iles, H.M.I., Divisiona Inspector of the North-Western Division Mr. F. H. D. Dale, H.M.I., Divisiona Inspector for the Metropolitan Division Mr. A. B. McLachlan, of the Loca Government Board; with Mr. L. J. Morison as Secretary. Why was no architec included?

Nos. 167-169, Great Portland Street W., are being rebuilt by Messrs E. A Roome and Co., of 36, Basinghall Street E.C., and Homerton, N.E., under th superintendence of Mr. Robert Angell, o Regent Street, S.W.

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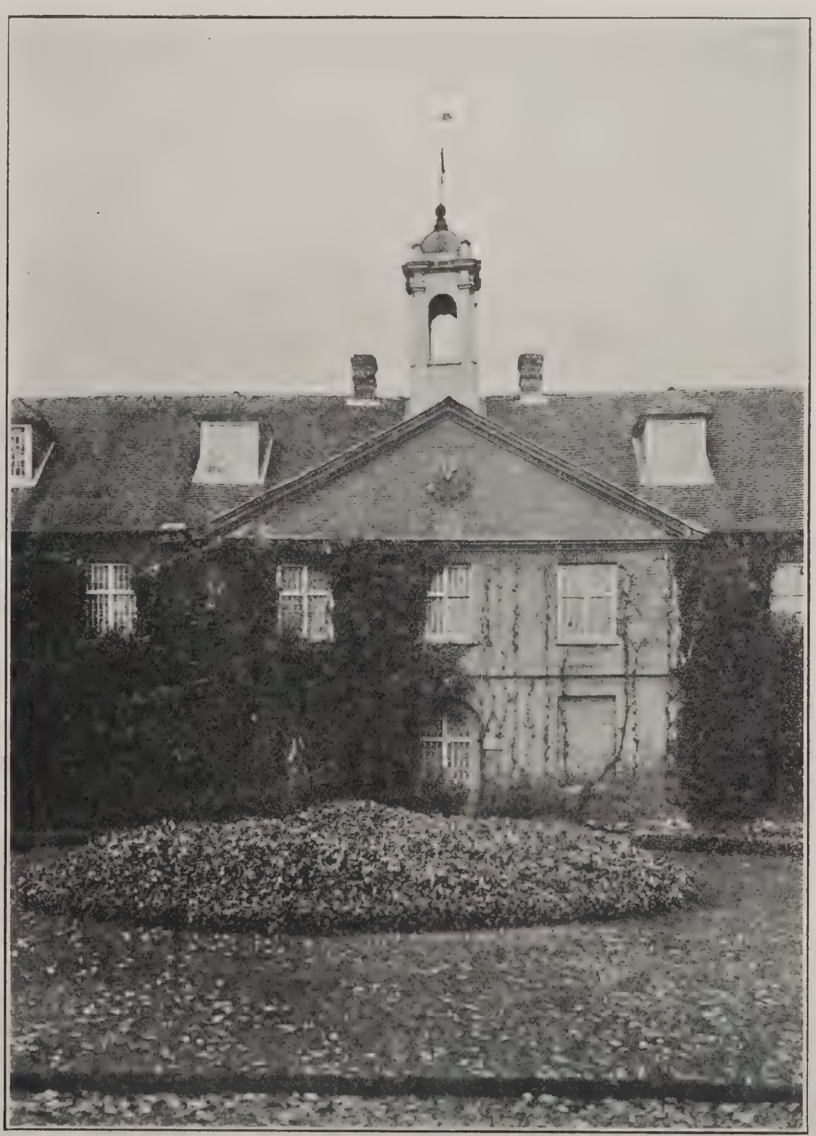
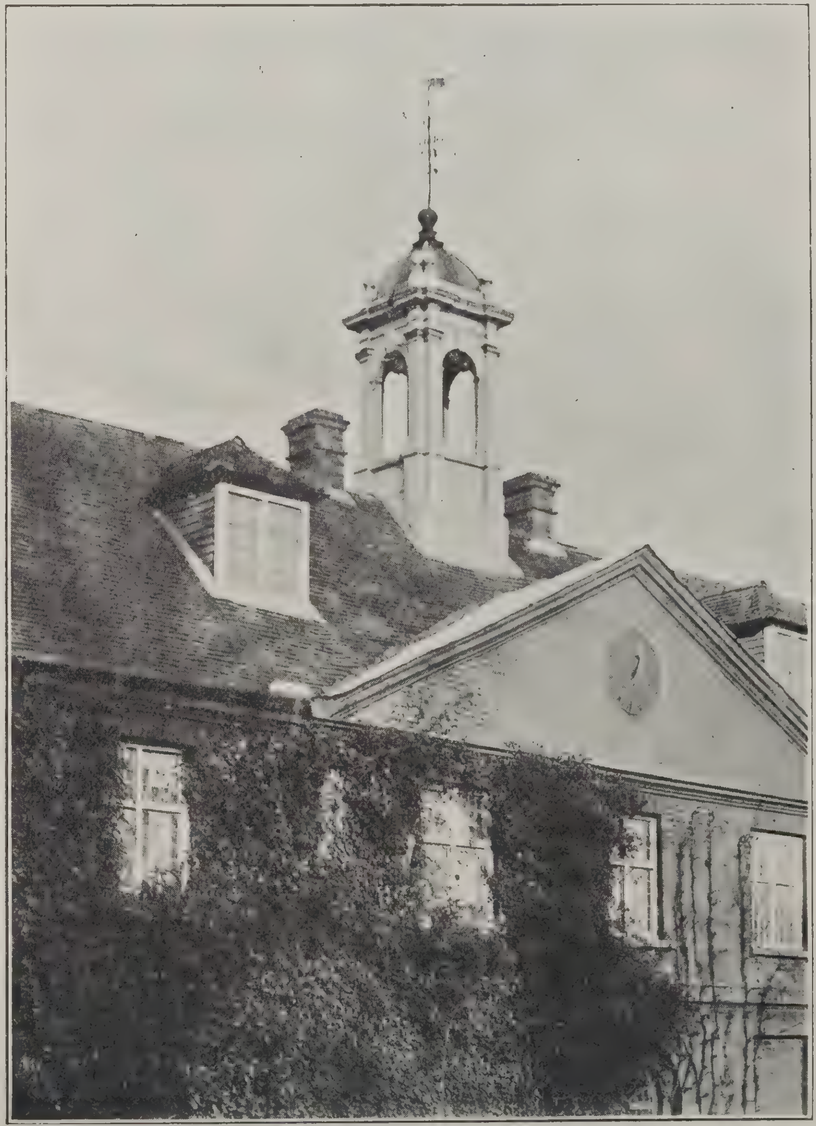
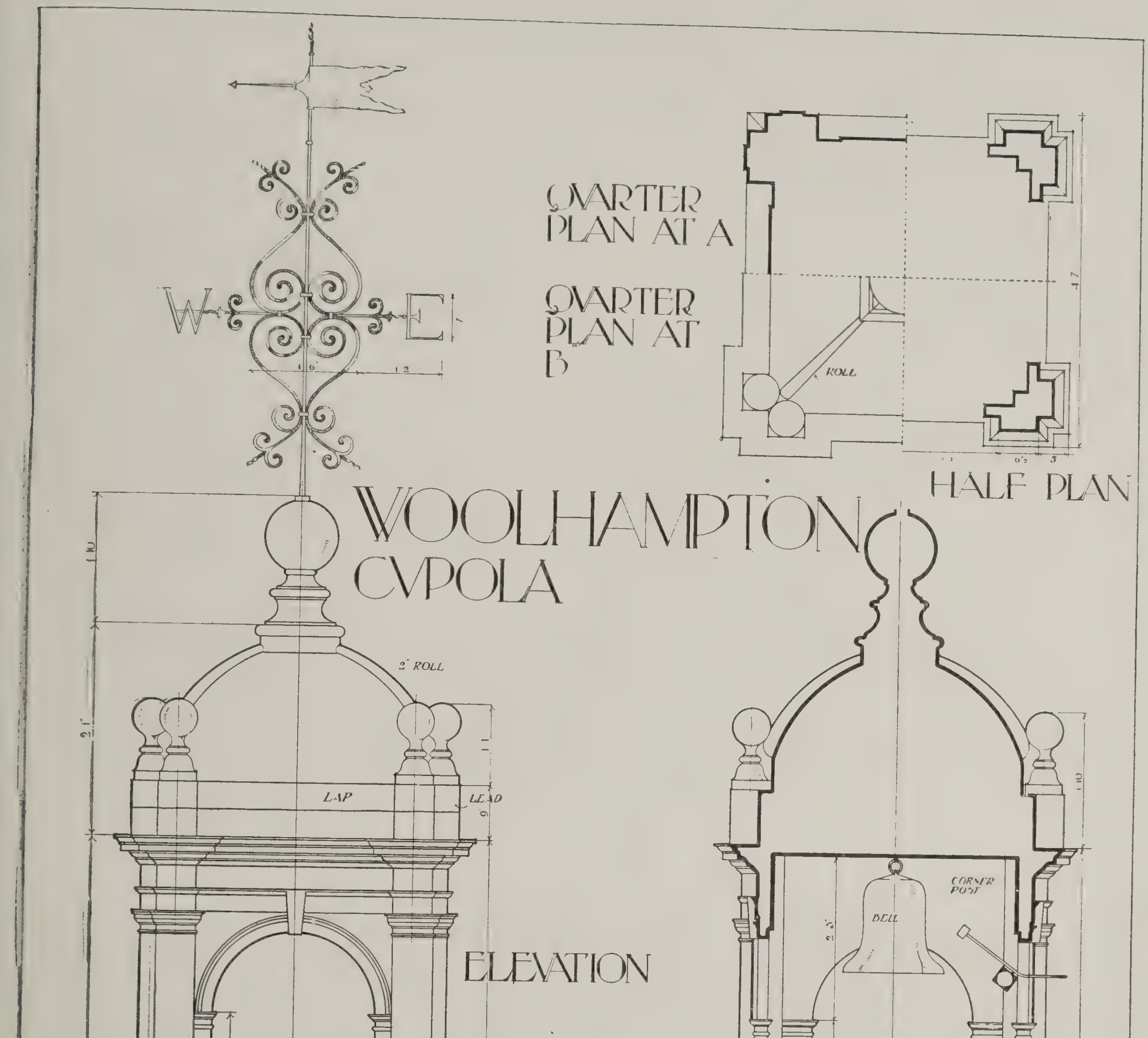


Elevation of Stables with Cupola.



Detail of Elevation with Cupola.

CUPOLA AT WOOLHAMPTON.



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COB WALLING.

BY HAROLD E. HENDERSON.

ne of the most charming and interest- kinds of walling to be found in old ge architecture is that composed of les or flints bonded together with , stone, or tile. It is principally to und in Norfolk, Suffolk, or East York- , in close proximity to the coast, the being obtained from the beach. sionally it is found more inland, e the rivers are shallow and wide, and ne lower reaches of the Yore and rfe, in Yorkshire, is to be found quite le colony of "cob" houses.

here is no other type of wall giving er texture and colour, and the variety obtained by the different methods of ng and bonding gives interest to the lest structure.

b walls (for houses) are from 1 ft. 9 in. ft. 3 in. thick, built of cobbles vary- in size, the larger and denser ones at the base and getting smaller to- s the eaves. They are built with arse mortar composed of lime and gravel, and all interstices, pockets, are filled with broken brick, stone, arp flints, and mortar. Joints are and flat pointed, and in many cases ted with small "nail-head" flints, , or stone. Sometimes the base up e ground floor level is built of brick ughly dressed stone, from which the walling starts.

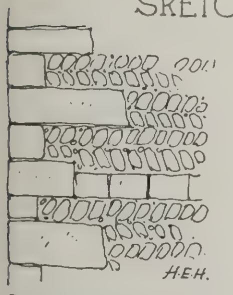
good example giving conclusive evi- e of the strength and lasting power is type of walling is to be seen (Fig. the Saxon Tower of St. Mary, Bishop- York. The quoins are of stone, and illing is of flints built herring-bone on, with occasional courses of squared s and Roman tiles. Fig. 2 is a dary wall near York, only 13 in. , which has stood for more than two red and fifty years. It is built of river cobbles bonded with stone troughs about 3 ft. apart. Horizontal courses of bricks also occur to fulfil the same purpose. The cobbles are very often built random, and brought up to a level course every 3 ft. in height, where a thin band of stone is inserted, as at Withernsea and Skeffling churches, in Holderness.

More often, though, the flints are erected in herring-bone form, either with continuous bands of brick or with troughs of brick 9 in. long and three courses in depth. Fig. 3, showing the gable-end and part of the front of a cottage, gives several interesting points in cobble and brick construction. The dressings to the door and windows, and the angle quoins, are of brick, with toothing into the cobble walls, and between the door and window is an interesting bit of work showing horizontal bands of brick on edge and vertical toothed bonders very similar to the brick ties to be seen in the concrete construction of the Romans. The eaves are of brick, with a simple dentilled cornice, and the gable parapet is also of brick, 4½ in. thick, with "tumbling" built at right angles to the inclination of the roofs, and forming a perfect key for the cobble wall. Notice should be taken of the brick courses indicating the position of the fireplace and the run of the flue.

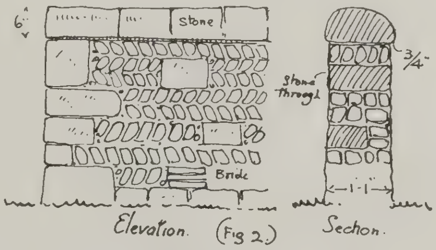
One will often find simple patterns worked in dark flints in the same manner as the burnt header patterning in brickwork, a chequer panelling in alternate squares of brick and flint, and a very interesting type is the imitation of Flemish bond, the stretchers being of brick, and the headers of flint.

It is a great pity that this beautiful kind of walling is almost extinct in modern building practice, for the writer is told by the cottagers that it is perfectly watertight, and is much warmer than the 9 in. wall of the modern cottage; and when it is built in the logical manner of bygone craftsmen, it is full of interest and beauty, without the application of any architectural embellishment.

SKETCHES of COB WALLING.

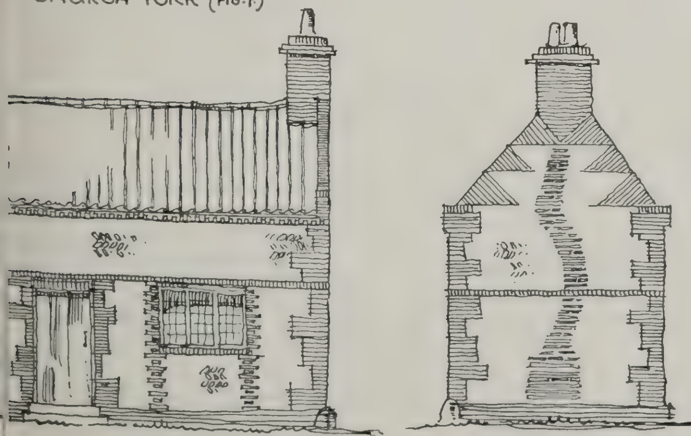


SAXON WALLING from ST MARY BISHOPHILL CHURCH YORK (FIG.1.)



(Fig 2.)

A BOUNDARY WALL near YORK BUILT OF STONE, FLINTS and BRICK.



SKETCH OF A HOLDERNESS COTTAGE BUILT OF BEACH FLINTS BONDED WITH BRICK AND ROOFED WITH PANTILES.

CUTTING STEEL SHEET PILING WITH AN OXY-ACETYLENE FLAME

The data here given refer specifically to work observed by the writer where 12 in. short piling had to be cut off in obstructed spaces. Incidentally other data of similar nature compiled from various sources are given.

The apparatus made by the National Pneumatic Company for cutting steel consists of a torch which has a tip containing two pairs of small holes for the oxy-acetylene heating flame, and a fifth hole in the centre, which supplies the oxygen to the metal after it is heated. The presence of oxygen in contact with the heated steel oxidises or burns it up rapidly. The oxygen used with the acetylene flame is merely to increase the temperature of the flame. This flame has a temperature of about 6,300 deg. F. The two gases are supplied in the ratio of about 1.3 parts oxygen to 1 part of acetylene.

In operation, the torch is moved along the cutting line, and the metal is heated white hot, then the main oxygen valve is opened and a small stream of oxygen at 50 lb. pressure is blown upon the hot surface. The oxygen unites rapidly with this steel at this temperature, forming oxide of iron, which runs molten from the cut. It requires 0.38 oz. of oxygen per ounce of iron to form the oxidised iron. The tanks of oxygen are supplied with 100 cubic feet of oxygen at atmospheric pressure, but when compressed into the tank the pressure is run up to 300 lb. Each tank, therefore, contains about 143 oz. of oxygen or enough to oxidise 376.6 cubic ins. of metal, provided no oxygen is wasted. This amount wasted depends to a large extent upon the care taken by the operator, and also upon the accessibility of the cut.

Cast iron cannot be cut by this method, apparently because of the high percentage of carbon contained. The rate at which steel can be cut has been found, under shop conditions, to be about as follows: ¼ in. steel at the rate of 15 ins. per minute; ¾ to ¼ in. steel at the rate of 1 ft. per minute; 2 in. steel at the rate of 6 ins. per minute; 6 in. steel at the rate of 1 ft. in 3½ minutes.

In cutting the steel it is always desirable to have a cut running clear through the material, as it is difficult to cut a channel out of which the molten metal cannot run freely. This condition existed at the La-Salle Street tunnel, Chicago. It was decided to leave the 12 in. 35 lb. steel piling in place to protect the adjoining property. The piles had to be cut off below the strict level, and it was impossible to get at the piles from both sides. The difficulty lay in having a bank of dirt against the opposite side, thus preventing the flame and force of the oxygen from blowing the metal through to the other side. It was always running back and covering the surface, which should have been exposed freely to the flame. On this work about 35 piles were cut per 9 hour day, using two outfits and five to six tanks of oxygen. The amount of oxygen used was five or six times that necessary to oxidise the steel cut out.

In this work the two cutting outfits were each handled by one man. Two labourers were used to pull out the short sections of pile after they were cut loose.

An example of great saving by the use of this apparatus was that of the wrecking of pier 14 on the North River, New York, after its destruction by fire on July 9, 1910. The pier extended about 700 ft. into the stream, and carried a steel structure 50 ft.

wide by 700 ft. long, containing some 2,000 tions of steel. A Philadelphia firm contracted to wreck it in 30 days, or forfeit $300 a day for each day in excess of that time. It had been estimated that 35 men would be required for the work in the usual way, but it was found that by using the oxy-acetylene apparatus the force could be reduced to 18 men, and the work was completed in 23 working days.

In sinking caissons for the foundations of the Boston Store, Chicago, the cutting flame was employed to clear the way of the old steel grillage foundations encountered. Here the method saved a good many hundreds of dollars as it would have been practically impossible to get in with hacksaws.

The method was also employed by the Geo. W. Jackson Company in cutting away members from the elevated railway structure, where changes were being made. The oxy-acetylene flame not only cut about one-third faster than is possible to cut by hand, but in this case the hand process would have been the slow process of cutting a large number of rivets.

Figuring the labour at 30 cents per hour, the oxygen used at 2½ cents per cubic foot, and the acetylene at 1 cent per cubic foot, it is estimated that the cost for ordinary work is 9 cents per square inch.

SIMPLE STRESS DIAGRAM FOR STRUTS AND COLUMNS.

The accompanying diagram is most conveniently constructed on standard cross-section paper ruled 10 by 10 to the inch. The allowable stress per square inch is measured horizontally, and the length of member is measured vertically.

Starting at the lower left-hand corner of the diagram, mark the vertical lines at the inch points toward the right 15.000 lb., 14,000 lbs., etc., representing allowable stress per square inch to a scale of 1 in. = 1,000 lb.

Then starting at the same point mark the horizontal lines at the inch points 0, 10 ft., 20 ft., etc., reading upward and representing the length of the members to a scale of 1 in. = 10 ft.

Now assume the radius of gyration to be measured on the diagram to full size, starting at the horizontal line representing 0 ft. and measuring upward. Therefore as one vertical inch on the diagram represents 1 in. of radius of gyration and also 10 ft. of length of member, find the allowable unit stress for this ratio of l/r, namely, 120, by substituting this value in the formula 15,000—60 l/r. This gives an allowable stress of 7,800 lb. for $l/r = 120$. This means that on the vertical line representing 7,800 lb. the radius of gyration can be measured at full size, so mark this line "radius of gyration line" and mark the horizontal intersecting lines 1 in., 2 in., etc. Now draw diagonal lines through these points in the direction of the origin (0, 15,000 lb.) and extending between the limits of 13,000 and 3,480 lb.

Values of l/r may be represented on the diagram by simply measuring to the right from 15,000 lb. and remembering that every 600 lb. represents 10 l/r.

In using the diagram the length of the member is found on the side, and this horizontal line followed to its intersection with the diagonal representing the desired radius of gyration. The vertical line through this intersection represents the allowable stress. The heavy broken line in the diagram shows how the allowable stress is found for a column 35 ft. long with a radius of gyration of 4 in.

Lines for intermediate value of r need not be drawn, but a ruler laid on the diagram intersecting the origin and any desired value of r scaled on the 7,800 lb. line shows the required intersection with the vertical lines.

The diagram was originally contributed to an American technical journal by Mr. O. W. Childs.

ASPHALT FOR ROADS.

When speaking of asphalt for road purposes the main characteristics demanded from the bituminous material should be (a) adhesiveness, and (b) elasticity.

So-called asphalt or bitumen of paraffin origin (says Dr. Albert Sommer, in the "Engineering Record") lacks adhesive power to such an extent that its main virtue, namely, the power to hold together the mineral aggregate of the road, is almost rendered nil. In actual use as heavy road oils or road binders the classification which was formerly given by the writer has been fully justified. Owing to their non-adhesive character and their being accompanied by heavy unchangeable oils, paraffin residuals, when applied as heavy road oils, have usually rendered streets smeary and sometimes impassable. After a while, the oils apparently disappear, but instead of leaving a percentage of so-called "asphalt," they disintegrate entirely on the surface, and the dust which is then formed is often accompanied by greasy particles which, when blown about, cause no little damage and give rise to much complaint.

The reasons for such action on the part of paraffin or even semi-paraffin oils may be sought for in the following:—

1. They consist of two distinct and heterogeneous series of hydrocarbons, and what little asphalt they contain is dissolved in liquid, viscous paraffin hydrocarbons.

2. While this mixture of hydrocarbons may not change or separate appreciably when kept in a container by itself, yet under increased action of gravity, brought about by buoyancy or capillarity, they will behave differently.

3. Buoyancy will result if such mixtures are exposed to water. This will be the case, for instance, when oils of such character are applied to roads which are subsequently wet by rain. The lighter oils will then drift to the surface, whereas the heavier are retained and follow more slowly. This will, of course, result in making the road exceedingly slippery in wet weather, and naturally will in time also entirely eliminate the oil.

4. The effect of capillarity will always be recognized when oil is incorporated with the road surface; the finely distributed mineral aggregate will act like a clay filter and will retain the asphaltic components, whereas the paraffin components will rise to the surface. This action is by no means novel, but has been made use of for more than a generation in the manufacture of vaseline, cylinder oils, etc., which substances are produced from petroleum residuum by filtering through layers of Fuller's earth, clay, or carbon; these agencies, owing to their porous character, retaining the asphaltic components of the petrolenes. This process is also known as "physical purification of oils," and inasmuch as there is no doubt that it has its cause in molecular atraction it is certain that the same phenomenon occurs on street surfaces. This can be quickly demonstrated by applying a drop of a semi-asphaltic or semi-paraffin oil on blotting paper, where after a few hours it will separate into an outer ring of paraffin hydrocarbon, the asphaltic part remaining in the centre.

So-called "bleeding" of an oil on a road no doubt has its cause in these physical conditions, and it will always be found that the material which collects on the surface of a road by "bleeding" is much softer and contains a larger amount of petroleum than the material originally applied.

Owing to their homogeneous character and the great physical affinity of asphalts for finely divided mineral matter, liquid asphalts, when applied to loose macadam or screenings, will be quickly absorbed by the same and, due to their absolute lack of paraffin hydrocarbons, will not release any oil later on. Therefore, there will be no "bleeding" of a road treated with liquid asphalt, provided the application was not excessive but uniform and in accordance with its nature.

Furthermore, shortly after their application these malthas or liquid asphalts will quickly "set up" to solid asphalt, which feature—probably due to sulphur in peculiar combination—seems to the writer to be one of the main characteristics of asphalt, and should probably be made the starting point of future definitions of asphalt.

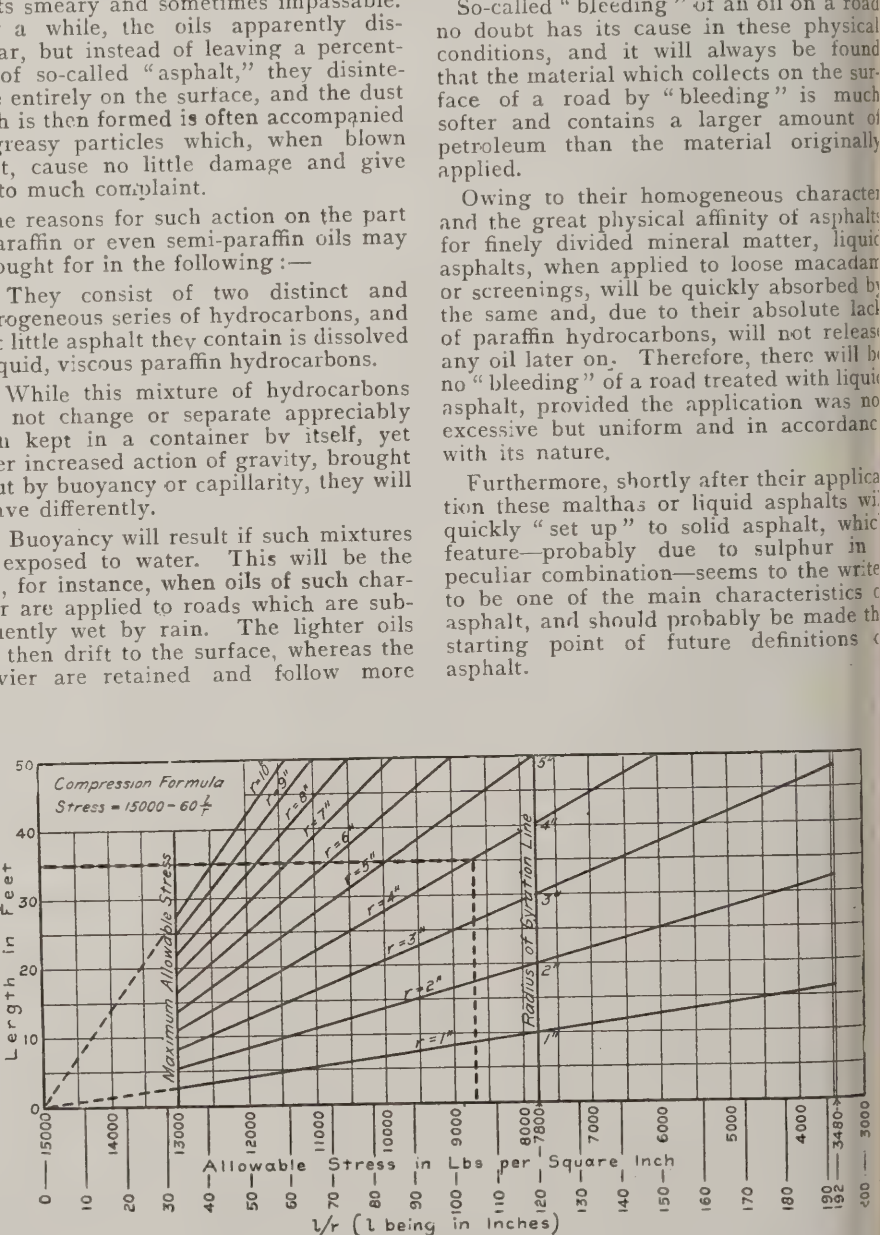


DIAGRAM OF ALLOWABLE STRESS IN STRUTS AND COLUMNS.

It cannot be emphasized too strongly at the difference in time in which various pes of semi-solid bitumen reach the same age of solidity is astounding. Comparave experiments have been made, and will described in another place more in tail, which have shown that when a solled "road asphalt" of paraffin origin d a natural, concentrated asphalt, both equal consistency, were heated simulneously until a consistency of 100 penetion had been reached, it took 20 hours the case of the paraffin product and one ur in the case of the asphaltic product. ie asphaltic product does not have to be ked down or oxidized into an artificial nsistency, but seems to yield quickly, d perhaps through polymerization, a e asphalt which to all appearance is entical with the natural asphalt found in e Trinidad or Bermudez Lakes.

With these products, therefore, we have e means of a new asphaltic construction ich consists in the gradual building up bituminous surfaces by surface application of an asphalt of a consistency softer an that of the one which it finally sumes, and while such products may be plied almost in the same manner as ad oils, yet they should not be considered thus palliatives, but after repeated and rrect application will form an asphaltic at of considerable durability.

Owing to their peculiar nature—liquid d yet thoroughly asphaltic—these products will permit an altogether different thod of bituminous construction. They ust not be applied to dusty surfaces, cause they will, like solid asphalt, ickly incorporate with the dust and form mps from which the oil does not subsequently ooze out again and distribute elf over the rest of the surface, as in the se of paraffin oil, but which retain the umen stubbornly, and, owing to its cess, will later make soft spots in the ad. It is a peculiar characteristic of se liquid asphalts that they will not read over the road surface like paraffin os, but that they remain where applied. is, of course, is one of their main virs, and the best results will be derived the most careful and uniform distribution of these products. It is advisable to ply liquid asphalt on a surface over a od foundation consisting of a thin, but en, loose layer of stone, say 1 to ¾ in. dvn to screenings, on which the liquid halt should be applied in a homogeous, uniform layer, avoiding excess any place; if necessary the stone should slightly raked after the application. On this "binder" course thus prepared, a top rse of stone screenings should be rolled and the result will be like the usual iminous surface.

nother feature of the Trinidad product he fact that, owing to the apparent lack heavy intermediate fractions consisting heavy hydrocarbons of high boiling nt, asphalts of considerable solidity can obtained by distillation at comparaly low temperatures. It is the adhesive ver of asphalt which will suffer first never a temperature is reached which ses any considerable decomposition, while it must be conceded that it ld be injurious for asphaltic bodies to educed in a still to the consistency of, lake asphalt, owing to the high temture for such a process, yet asphalts be obtained from Trinidad maltha onservative temperatures of such conncy that, when added to the lake halt, there will result compounds of all sible consistencies for paving and other poses. Thus it is no longer necessary ux the refined lake asphalt with questionable fluxes which more or less jeopardize its good qualities, but it produces substances in which the Trinidad bitumen is not only considerably enriched, but which, on account of being composed of chemically identical elements, are absolutely homogenous, uniform, and may be considered as the only natural asphaltic substances the bitumen of which has not been impaired by excessive temperatures in the making.

MANHOLES FOR RAILWAY WIRES.

It was necessary to make provision for both high- and low-tension wires besides the tracks of a railway, and in a depressed section of 4,000 ft. a conduit was laid along the toe of one of the walls above the footing. This conduit is of concrete, containing six tubes in two vertical rows of three each, the row nearest the wall face carrying the high-tension wires and the outside row the low-tension wires. Manholes are provided every 400 ft.

At the manholes the high-tension and the low-tension wires are kept remote from each other by means of a two-chamber design, shown in the accompanying illustrations. As the available space between the face of the wall and the ends of the ties is sufficient for only one chamber, the two chambers adjoin each other in the longitudinal direction, and the conduits from each, leading to the main wall conduit, pass through one of the walls of the other.

The manhole is built against the face of the wall with its floor about 2½ ft. below the base of the wall. It is divided into two chambers, 3 by 4 ft. in section and 4 ft. deep, by a 6 in. transverse wall. All outside walls are also 6 in. thick. The two chambers are so placed that the inside face of the low-tension chamber on the retaining wall side is in the same plane with the face of the wall, while the high-tension chamber runs back into a 12 in. recess in the wall. This produces a 6 in. jog in the two longitudinal walls at the dividing wall, so that at one end of each chamber the conduits may be run straight through the wall of the other chamber.

About 6 ft. back from the manhole in each direction the high-tension and low-tension groups of conduits separate, the high-tension conduits continuing along the toe of the retaining wall, thence through the inside wall of the low-tension chamber and into the high-tension chamber. The low-tension tubes are carried out to the track side of the low-tension manhole, where they enter it, passing out opposite into the outside wall of the high-tension chamber and joining the main conduit again about 6 ft. beyond. The two sets of conduits are thus brought in and out of the manholes without being exposed to contact with each other at any point.

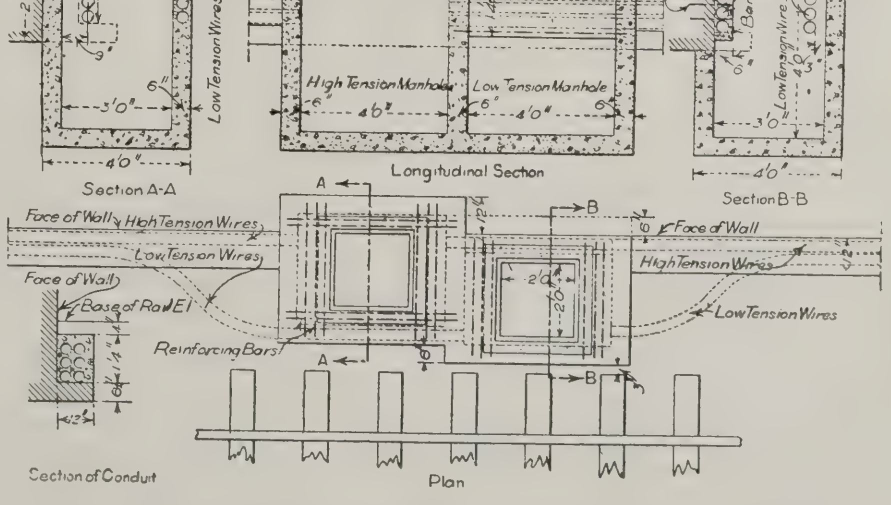
No special provision for waterproofing is made, as it has been found that the surface and other water which finds its way in is small and causes no trouble. This water can be pumped out from time to time with a boat pump.

EXTENDING A CHIMNEY STACK.

An addition was recently made to the height of the steel stack of the central power plant belonging to the Oliver Estate, Pittsburg. The plant is placed in the basement of the Stevenson building annexe, and as originally constructed the stack was a self-supporting steel structure 10 ft. 6¾ in. external diameter, rising to a height of over 221 ft. above the boiler room floor and 80 ft. above the roof of the building. It terminated approximately at a level with the 15th floor of the Oliver building about 200 ft. away. The gases from the stack caused considerable discomfort to the tenants on the several upper floors of this building, and it was therefore decided to raise the stack.

At first it was proposed to build a symmetrical steel tower above the present stack, but it was found that the corner column of the building was not heavy enough to carry the load, and it was, therefore, decided to use an overhung structure. This consists of a steel tower, 83 ft. 9 in. high, supported on four of the building columns and carrying the new stack on a cantilever. The new part of the stack is 124 ft. high, making the total height above the boiler room floor 345 ft. 8⅝ in. It has an inside diameter of 7 ft. 8 in.

In the work of erection the steel tower was raised to its full height, which brought it 6 ft. above the top of the old stack. An 18 ft. section of the old stack was removed



DETAILS OF POWER-WIRE MANHOLE.

and lowered to the ground, complete with its lining, and a smoke-tight box, 12 ft. by 12 ft., in section, with side walls 8 ft. high and open at the top, was erected 14 ft. above the reduced stack. This afforded a shield for the men, and protected them from the smoke while putting up the lower sections of the new stack. After this was completed the temporary box was removed and most of the smoke was drawn through the 18 ft. open gap. The top section of the old stack was then hoisted back into place in one piece.

TRADE AND CRAFT.

Office Appliances.

Our representative has had a further opportunity of inspecting the time- and labour-saving appliances which are being manufactured and sold by Roneo, Ltd. These include the Roneo copying machine, in which the letter or other document to be copied is simply placed on a feed-tray and, with a turn of the handle, a copy is produced and as many more may follow as are required, the use of water being rendered unnecessary. This machine produces perfect copies of letters, invoices, documents, whether type-written or handwritten, without blurring or creasing the originals. With the firm's duplicating machines, which turn out copies at the rate of 80 to 100 per minute, the whole process, registering, inking, and blotting, is automatic. In a testimonial which Roneo, Ltd., received from the Peace Tribunal, dealing with the Newfoundland Fisheries and the Hague Award, it was stated that the copies supplied by Roneo machines were so clearly done that several members of the tribunal, and counsel, volunteered the statement that these copies were as useful as real print. The record contained nearly 2,000,000 words, and 75 copies were run off daily. This firm's filing cabinets and their alphabetical numerical system of filing known as "Numeralpha," have been previously described in this Journal. The filing cabinets are made of steel, and are therefore fire-resisting, are more durable than wood, are rodent, vermin, and dust proof, and are made on the sectional system. As we have so often insisted, the importance of eliminating all inflammable material from office interiors is being recognised more fully every day, and this firm show that it is possible to produce steel panel doors, wainscoting, and partitions with moulding and all details in accordance with architects' plans. The doors have been approved by the London County Council. These, and many other up-to-date appliances and fittings, may be seen at the showrooms of Roneo, Ltd., 26, Holborn Viaduct.

Carron Ranges and Firegrates.

Two new catalogues that have been issued by the Carron Company, of Carron, Stirlingshire, deal respectively with "The Carron Kitchen Ranges" and "Select Designs in Firegrates." The former comprises considerably more than a hundred illustrations of ranges of various types, sizes, and patterns, from the small "Trial" cooking stove, for use in camps and small apartments, to the large roasting and close-fire ranges which are suitable for hotels and other large establishments, while, of course, there are many intermediate sizes. It would seem, in fact, that every requirement or condition has been anticipated and comprehended. A valuable feature of this catalogue is the provision of notes on the management of the ranges, and illustrated directions for fixing and setting them.

The catalogue of firegrate designs contains 244 pages of illustrations, and yet these represent merely a selection of the firm's vast stock of patterns. Those shown in the catalogue are all of modern type, and show full recognition of the facts that the barless fire is now extremely popular, and that the decorative features must be kept dignified and simple. Those with the "Radiant" and "Perpetua" fire, with brass or copper canopies and slow-combustion frets, are of particularly chaste design; and the neatness of other examples of barless or hearth fires, such as the "Carrodine," "Phœnix," "Carronette," etc., could not be exceeded. Register grates of many patterns are also shown, as well as hob register and combination grates; and this catalogue, like the other, will be found to be very helpful and suggestive to those upon whom falls the task of arranging for the effective service and appearance of the fireplace, which, being the dominating feature of a room, may easily make or mar the general scheme.

STATUARY FOR THE LONDON OPERA HOUSE.

One of the features of the building of the London Opera House which Mr. Oscar Hammerstein is making in Kingsway will be the groups of statuary and carvings placed under the direction of the sculptor, Mr. Thomas Rudge. They consist of twelve statues over twice life-size carved in Portland stone, consisting of two groups representing "Harmony" and "Melody." The centre figure of each group will be about 14 ft. high at each end of the façade. There will also be four other figures, representing respectively "Comedy," "Tragedy," "Song," and "Dance," and two central figures (seated), representing "Inspiration" and "Composition." The weight of each statue is approximately 20 tons, and some of the figures will require two blocks of stone, and others three. Mr. Thomas Rudge designed the "Royal Welsh Fusilier" memorial at Wrexham, which was unveiled by the King and Queen. He is also the author of statues in Salisbury, Chester, and Trinidad Cathedrals, Colchester Municipal Buildings, and the Oratory, Birmingham.

DISCLAIMED OWNERSHIP OF A WALL.

The ownership of a wall was in question in a case recently tried at Loftus police court. The wall, which was built some years ago, divides Springhead Terrace from land owned by Mr. Joseph Wilson, Loftus. It was erected for the purpose of retaining the soil, following excavations for the erection of houses and making a back street on land owned by the Marquis of Zetland. Some time ago the Loftus Urban Council carried out private improvements in the back street, and apportioned the cost of the work upon the owners of the houses on one side and upon Mr. Joseph Wilson, as the owner of the land abutting on the street at the opposite side. The amount apportioned to Mr. Wilson was £35 18s. 3d. but he denied liability for the payment, his contention being that he was not an abutting owner of property, as the wall was not erected either by him or by the previous owners of the land, and therefore it did not belong to him. The Urban Council now asked
for an order to enforce payment.
behalf of the Urban Council, Mr. Her
Hoggett, the clerk, explained that t
private improvements of the street we
carried out under the Public Health A
of 1875, and that each owner of the adjo
ing houses had paid their moiety. T
land owned by Mr. Wilson was used
garden ground, and extended the f
length of the back street. In some pa
of the street the land was six feet high
than the level of the roadway, and it w
kept up by the retaining wall. M
Hoggett stated that there were ma
similar retaining walls in different pa
of the town, and there was no troul
about the ownership. The contention
the Urban Council was that the wall
longed to Wilson, and that he was lia
for half the cost of the street impro
ments. A fence grew on a part of
wall, and Wilson claimed that fence
his property. If the wall were remov
the soil and the fence would fall into
back street, and that being so, Mr. H
gett contended that the wall was p
and parcel of the property of Mr. Wils
It was immaterial whether the wall w
erected by Wilson or by his ancestors
title, or by the Marquess of Zetland;
now belonged to him.—Mr. T. H. Tarl
surveyor to the Loftus Urban Coun
said that during the 19 years he had be
in Loftus he had not heard of anyo
repairing the wall.

On behalf of Mr. Wilson, Mr. Sea
Gray contended that if it could be prov
that the wall did not belong to his clie
then "the case of the Council would go
the wall."—Mr. Hoggett admitted the ar
ment.—Mr. Gray quoted from deeds
prove that the wall did not belong to
Wilson. No mention was made of it
any of the deeds dealing with the sale
transfer of the land. He called Mr. B
man, retired farmer, Loftus, to prove t
he carted the stone for the erection of
wall in 1875, and was engaged by L
Zetland's agent, who paid him for
work.—Mr. Wilson stated that he bou
the land two years ago, and that noth
was then said about buying the wall
After a private consultation, the ch
man said that the Bench had decided
make the order for the money to be pa

AUTOMATIC WATER SUPPLY.

The new automatic water supply to
works of the Columbia Phonograph C
Ltd., Bendon Valley, Wandsworth, fr
the River Wandle, necessitated by
rapid increase in their output, was
into operation towards the end of Ju
and has proved entirely satisfactory un
the particularly trying atmospheric c
ditions which have since existed.
water, after filtration, runs by gravitat
to a well in the works, and is then lif
by a direct acting pump, circulated ro
the casings of a large number of
presses, and delivered into a cooling t
from whence it is returned to the ri
without loss. The supply is automatic
controlled by the requirements. The
plant has effected an immediate econ
in the working expenses equivalent t
saving of from £400 to £500 a year.
works were designed by Messrs. He
Adams and Son, MM.I.Mech.E.,
Queen Victoria Street, London, E.C.,
were carried out by direct labour un
their supervision.

**The stonework of the modern portio
Dunfermline Abbey is being experim
ally treated with silicate of soda, for
arrest of decay.**

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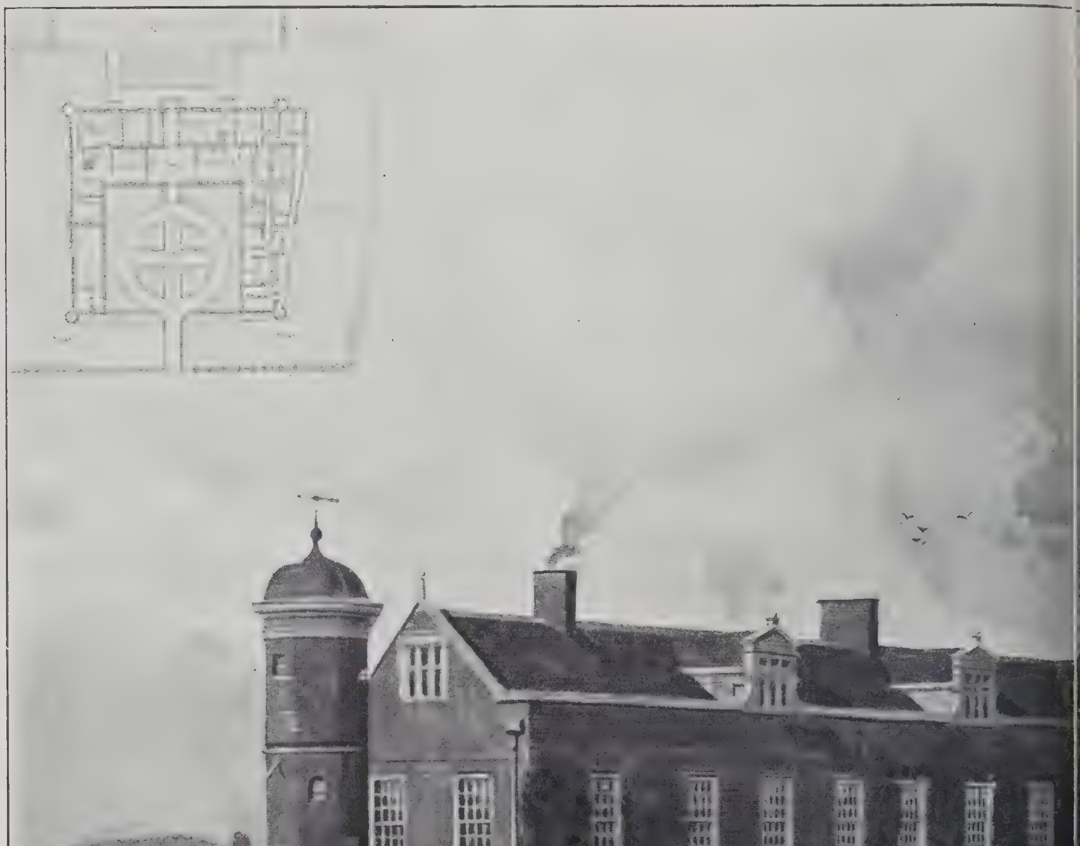
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, August 30th*, 1911.



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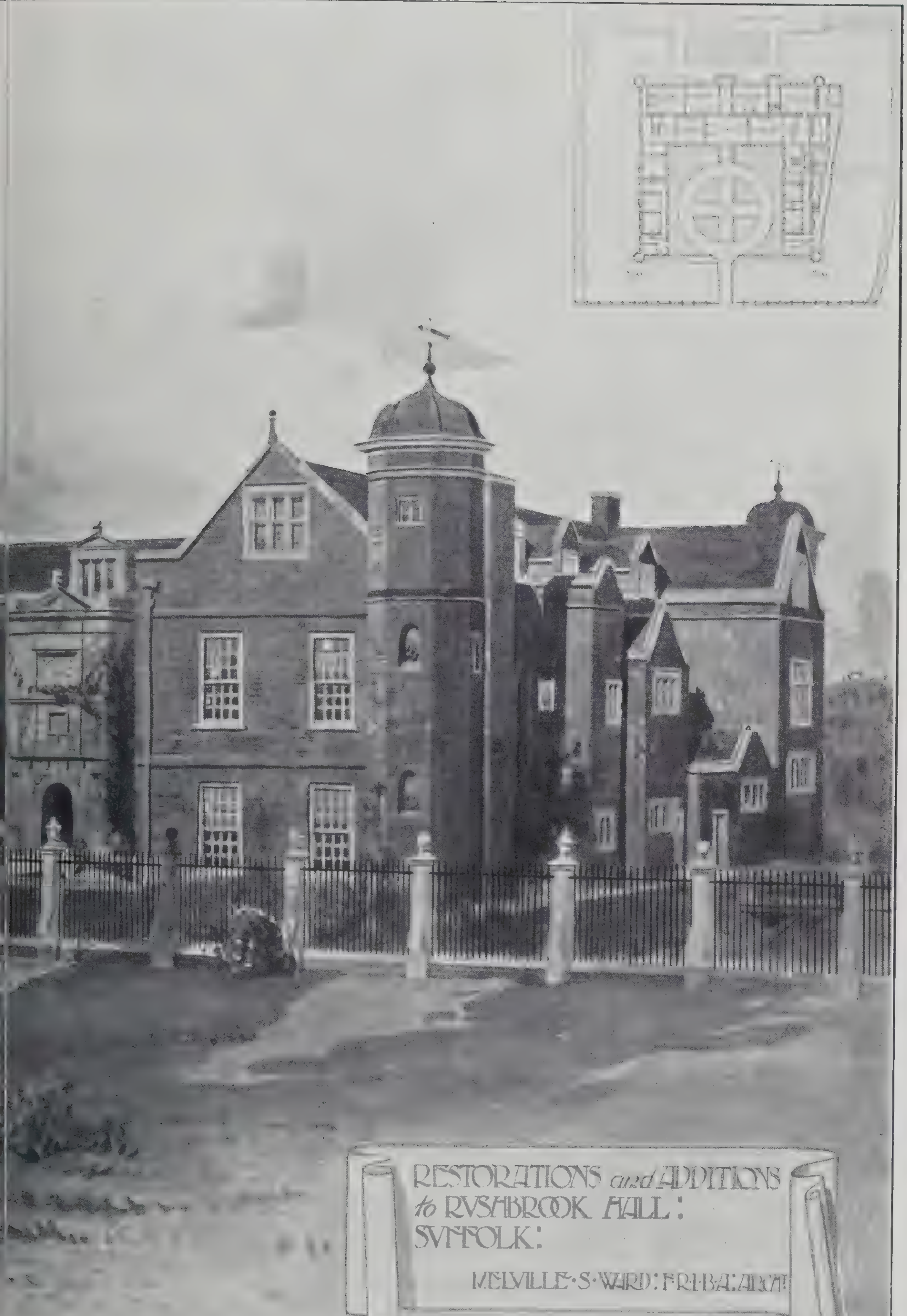

RESTORATIONS and ADDITIONS to RVSHBROOK HALL: SVFFOLK:

MELVILLE·S·WARD: F·R·I·B·A: ARCT

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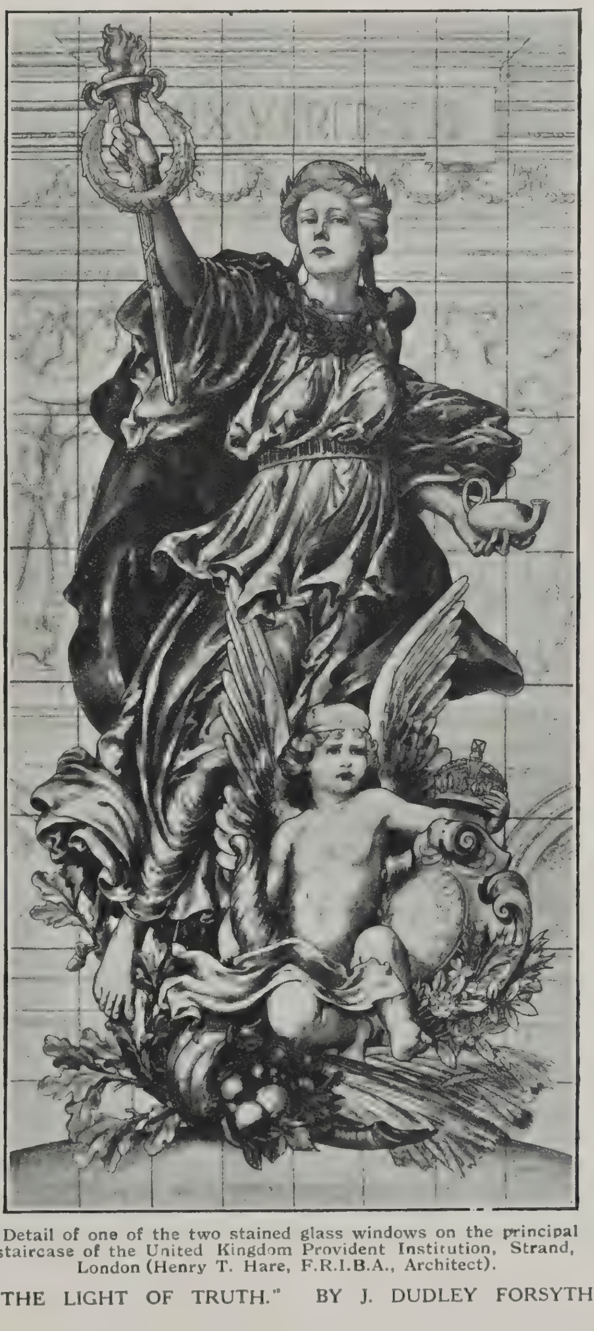
THE ARCHITECTS' &
BUILDERS' JOURNAL.

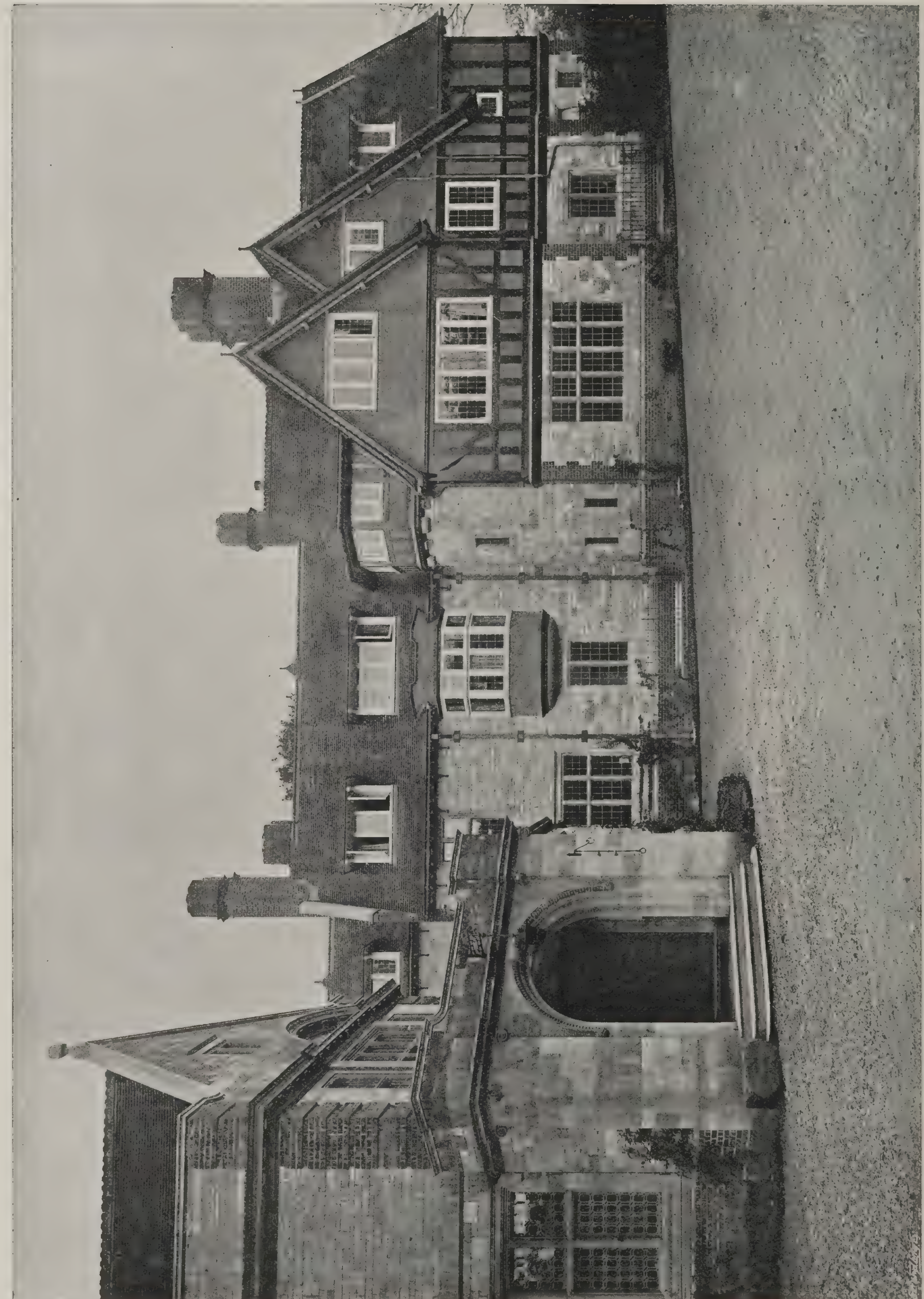
WEDNESDAY,
AUGUST 30th, 1911.

Volume XXXIV. No. 866.



Detail of one of the two stained glass windows on the principal staircase of the United Kingdom Provident Institution, Strand, London (Henry T. Hare, F.R.I.B.A., Architect).

"THE LIGHT OF TRUTH." BY J. DUDLEY FORSYTH.



HOLLINGTON HOUSE, NEWBURY: ENTRANCE COURT AND PRINCIPAL ENTRANCE. ARTHUR C. BLOMFIELD, M.A., F.R.I.B.A., ARCHITECT.

The walls are of brick, with a facing of Guiting stone, relief being given by angle piers of red brick.

THE ARCHITECTS' & BUILDERS' JOURNAL.

AUGUST 30th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 866.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

The Report of the Royal College of Art.

THE Report of the Departmental Committee on the Royal College of Art, recently issued (price 6d.) as a Blue-book, is a very important document, as practically it amounts to a review of the whole existing system of National art-teaching, combined with a series of recom- ndations as to the future. The probably large body of dence on which the Report is based is not yet, and possibly ll not be, attainable, but the trend of much of it may be thered from references and quotations in the Report.

Appendix III. to the Report gives an outline of the history the movement (1837-1900) which culminated in the mation of the Royal College of Art; a history which is iseful reminder of the purpose, sometimes forgotten, with ich the whole machinery of art education at South Kensing- was originally established. It arose out of the appointment 1835-36 of a "Select Committee on Arts and Manufac- es," the special object of which was to enquire into the best ans of extending a knowledge of the art and principles of ign, more especially among the manufacturing population the country. The object therefore evidently was to promote rovement in Applied Art, design applied to industries; a d of art in which this country, in the earlier part of last tury, was weaker even than in the Fine Arts of sculpture l painting, not themselves in a very brilliant condition, in e of the presence of a few men of genius who rose above general level.

he historical summary is a curious story of waver- between one ideal and another. The South Kensing- Art School was started with the avowed object of affording ufacturers an opportunity of acquiring a competent wledge of the fine arts "in so far as these were connected manufactures"; a reasonable proficiency in drawing was ndition of admission, as without this no study to any prac- l end would be possible. Drawing of the figure was ex- led as not bearing directly on the main object of the School. en Mr. Dyce was appointed Professor in 1838 he rightly drew this embargo, recognising (as an artist of his pro- ncy naturally would) that the drawing of the figure was he root of all high acquirement in drawing and design; des the fact that the introduction of the figure often comes s an essential element in applied art design. It seems ent, however, that before very long the School came to be ely a school for figure-drawing for its own sake, in ndent of any idea of its application to industrial art; and was a difference between Mr. Heath Wilson, who became rector" in 1843, and Mr. J. R. Herbert, on the ground the latter "did not confine the instruction in figure drawing in the limits proper to ornamental as distinct from fine "; a difference which led to Mr. Herbert's resignation. t painters in those days, like very many in the present cared little about decorative design; and Mr. Heath Wilson, who seems to have had very distinct ideas as to the proper objects of an Applied Art School, was quite right in opposing a course which would merely have tended to render the School a second edition of the Royal Academy. A reorganisation of the School took place in 1847, with the special object of emphasising the study of ornamental design as the main object of the School; "this forms the essential and characteristic business of the School, by which it is distinguished from other schools of art. Accordingly, all the exercises of the School are required to have reference, immediately or ultimately, to the purposes and requirements of ornamental art." This passage, from the Prospectus of 1847, is common sense put in plain language, but it did not prevent differences among the distinguished artists engaged as teachers. At a somewhat later period Lectureships on art subjects were instituted; and (speaking from other sources of information than those contained in the Report) there is reason to think that the securing of an appointment as a Lecturer was at that time very largely a matter of personal interest, and that various persons got comfortable berths and salaries for the delivery of stereotyped series of lectures which did not cost much trouble to the lecturer, or teach very much to the lectured. After 1875, when Mr. Poynter (as he then was) became Director, there was a more brilliant period when Legros and Dalou were among the teachers, the Director himself spending a great deal of thought and trouble over the School, and among other things composing an excellent series of elementary freehand drawing-books. But it is evident that the School again tended to become a general Art School rather than a school of Applied Art, and in fact it became to some extent a school for preparing students for the Royal Academy. Later, in consequence of the extensive establishment of Provincial art schools for which competent teachers were needed, the training of teachers, and the granting of certificates of proficiency, became a considerable portion of the work at South Kensington. It was in fact mainly owing to the demand of the masters of Schools of Art for a more obvious recognition of their qualifications that in 1897 the title "Royal College of Art" was substituted for that of "National Art Training School," accompanied by the establishment of a diploma of Associateship.

Since that time much has been done, mainly owing to the suggestions of Mr. Walter Crane, who became Principal of the College for two years (1898-1900), towards bringing back the "College of Art" to carrying out the object for which the "School of Design" was originally instituted. As a training school aiming at teaching certificates he found it fairly efficient, but he wished to revert to the original purpose and establish a definite course of study for design students; elementary courses in drawing, modelling, and painting, and special technical courses in various branches of design, "where an intimate knowledge of the conditions of handicrafts and manufactures could be acquired." The last point is of importance, since it is impossible to design well for any industry without knowing something of its practical processes. The Professors of the College were to be practical artists, "including an architect, a painter, a sculptor, and a designer"; a curious wording which seems to imply that architects, painters, and sculptors are not "designers."* A Council of Art was appointed, on the lines suggested by Mr. Crane (one of whom, Mr. Onslow Ford, is unhappily now dead); Mr. Spencer was appointed Head Master in 1900, and in that year the Council issued a memorandum in favour of a considerable extension of the technical classes:—

> "In addition to the existing classes in etching and stained glass, the Council recommended that instruction should be given in wood carving, stone and marble carving, mosaic, plaster work, metal work, enamel work, embroidery, furniture and cabinet work, pottery, shuttle weaving, tapestry, carpet weaving, book illustration, and lithography. These proposals are the basis of the present organisation of the school as set out in the prospectus, with the exception that limitations of space and similar difficulties have prevented the establishment of some of the practical classes recommended by the Council."

Thus it would seem that the Royal College of Art has now been, in the main, brought back to the object with which its predecessor, the School of Design, was originally founded; though it may be difficult to say exactly what etching, apparently one of the "existing classes," has to do with applied art.

So much for the summary of the past; the object of the bulk of the Report is to consider the present and future of the College of Art. As to the present, we gather from some of the evidence quoted that the applied art design furnished by pupils of the College and of the provincial Art Schools, which are taught by teachers trained under its system, does not do much to meet the wants of the manufacturers and the public. Of course, the question immediately suggests itself whether the fault is with the latter, who are offered something better than they can appreciate. We should certainly hesitate to take the verdict of an English manufacturing firm on the artistic quality of a design for a carpet, a wall-paper, or a wrought-iron grille; but they will know what can or cannot be easily executed, and also what their customers are likely to prefer. The latter point may have little to do with art, certainly; but there is a kind of tradition of unreasonableness about South Kensington which is perhaps not extinct. At the time, for instance, when South Kensington was practically a general school of art, the system there was to insist on a most elaborate mechanical finish in the shading of a figure-drawing from the round; a process which occupied many weeks and taught the student nothing. The way to get the most knowledge which a model or a cast can give is to draw it from as many positions as possible, not to spend valuable time in shading up one position; but that was the South Kensington system, and a most unpractical one. The Report leads to an impression that this unpractical spirit is still existent at South Kensington. At all events the designers turned out there do not seem to meet the case. The Report says:—

> "There is keen competition both amongst the manufacturers and amongst the furnishing houses, and we understand that designers who are thoroughly competent from the trade point of view can command liberal salaries. It might be expected, therefore, that the College of Art, if the students fulfilled these conditions, would exercise that influence over the artistic trades of the country which it was founded to exercise, and that the designers, who have passed through its course and have obtained the hall mark of its Associateship, would be eagerly snapped up by business men. All the evidence which we have been able to collect from many and divers sources of information has brought us to the regrettable conclusion that this is not in fact the case."

It was apparently stated in evidence that, from the point of view of the manufacturers, the type of designer turned out by the Royal College of Art is "unemployable." We are not told why; not in the Report at least; the detailed evidence might throw more light on it. Are the manufacturers right or wrong? It is not easy to say. In another part of the Report we gather that there is a complaint that the College of Art
students are not sufficiently acquainted with historic styles
ornament, and the manufacturers assert that their clients, t
public, "demand styles." The calico-printers complain th
"the South Kensington influence" encourages a particul
type of conventional floral design at the expense of "the mo
varied methods of treatment" for which the trade call. Th
probably means that the trade want realistic detail while t
College of Art encourages conventional detail. If that is t
explanation, the College of Art is probably in the right. M
W. Rothenstein, in a remark quoted in another part of t
Report, said that "Art Schools have been occupied in o
direction and the trades in another"; but what he precis
meant by that observation one cannot understand witho
seeing the context of his evidence. In all probability he mea
that the Art Schools were right and the trades wrong. At t
same time it seems probable that the style of design encourag
in the College has too little reference to the technique of
various crafts; it is an ideal of design only, apart from
actual conditions of manufacture. The general question
design, as a part of general education, is quite a differ
problem from that of industrial art design. The general id
is charmingly illustrated in a footnote which is no doub
quotation from a child's definition of design: "First you th
a thing, and then you draw a line round your think." Bu
the case of design for industrial purposes, success, as stated
the Report, can only be assured by the adoption of a meth
of training which will maintain throughout a very close con
tion between each student and the specific industry to wh
he belongs. "The student must, as it has been put to us,
thinking throughout in terms of his own material and metho
and at each stage of his progress towards the power of inv
ing suitable designs must be in a position to make cons
reference to the actual processes by which the designs wil
reproduced, and to see them translated into the material be
his eyes, and, wherever possible, by the work of his
hands." That is one of the best passages in the Report,
touches the root of the matter. Probably what sets the ma
facturers against the work of the College is the fact that
designs of its students do not seem to arise sufficiently ou
the actual conditions of working of the material. At the s
time we should be inclined to believe that some part of
dissatisfaction of the manufacturers arises from the fact
they and their public want a more popular and natural
and a less conventional style of design; and if that is the
in so far they are wrong and the College is right.

The present ordinances, or those which are intended
are only as yet partially in operation, at the College of
are evidently intended to meet this difficulty of the wa
relation between design and manufacture. But the R
suggests a further and more important step, in the dire
of decentralisation of art teaching. The Professors o
College, we learn in one paragraph, consider the pr
National competition "of doubtful utility," as tending
to education than to the premature manufacture of work
exhibition; and we are very much of the same mind. Bu
important suggestion is made on another page that, as
are established and well-equipped schools of art in mo
the great manufacturing centres, each of these shoul
encouraged to specialise in the needs of its own domina
dustry. In that case the College of Art, instead of att
ing to provide designs suitable to local industries, would re
as a school of advanced studies, under well qualified dire
open all the year round, to which students who, unde
proposed conditions, were already familiar with the tech
conditions of design for local industries, would come for h
studies in design as a climax to their education. This wo
a more hopeful mission for the college than the attem
direct and control the design for all manner of ap
industries, from a metropolitan centre which could n
practically in touch with the technical conditions of su
dustries. That is the possible future of the College
as shadowed forth in the Report.

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* The historical summary bears the initials of Mr. E. K. Chambers, the Chairman of the Departmental Committee.

Ve may add, however, that the complaints of manufacturers o the want of suitability of the College of Art School of ign for their manufactures must not be taken too seriously e given too much weight. It may only mean, in part at events, that the manufacturers want an inferior but more ular style of design. In that case the only remedy is to the best opportunities of educating the manufacturers and public.

HRONICLE AND COMMENT.

Woolner's Bust of Tennyson.

BRONZE copy of Thomas Woolner's bust of Tennyson was unveiled in Somersby church, by the Bishop of Lincoln, on the 102nd anniversary of the poet's h. St. Margaret, Somersby, was the church of Tenny s baptism, and he was born within a stone's throw of it he old Rectory. This picturesque house, to which Dr. nyson, the father of the poet, added an apartment resemb in its architecture a monkish refectory rather than a try rector's dining room, still stands in much the same as it appeared to Tennyson in his early years. A care r shows to visitors the room in which Tennyson wrote y of his early poems, and the house and garden retain y memories of the poet. The window of his attic looks rds a mill which inspired one of the most widely known s in the language, and is called in the district by no r name than that of "Tennyson's Brook." The beauti awn which slopes away from the back of the house has identified with the lawn on which Arthur Hallam "lay read the Tuscan poets." Stockwith Mill is said to be old mill across the wolds" of "The Miller's Daughter," Holywell behind the church "the dreadful hollow behind ittle wood" of "Maud."

"Little Known" London Statues.

NDER this title, in the *Outlook*, Mr. E. Beresford Chancellor has some interesting gossip. He states that, except for statues of Queen Anne, Queen Vic and other royal ladies, there is only a single monument voman in London—that to Mrs. Siddons, on Paddington . Is it quite correct to include in the list as "little n" Mr. F. W. Pomeroy's fine monument to Francis in South Square, Gray's Inn, where it was placed in ? but no doubt the sight is seclusive. But surely the of John Milton at St. Giles's, Cripplegate, where it et up six years ago, is very well known. The author's vation that Milton was born in Bread Street, "close by," haps in need of some qualification like "as the motor ' Cripplegate church and Bread Street being hardly bow-shot of each other. Other names that are hardly ite to Mr. Chancellor's title are those of Dr. Jenner, in leafy glades of Kensington Gardens"; Carlyle, who brooding on the Thames Embankment at Chelsea"; al Newman, who "stretches forth a nervous hand to tor-omnibuses as they pass, noisily, the niche in which nds by the Oratory in the Brompton Road"; while t Raikes, Professor Fawcett, John Stuart Mill, W. E. r, Brunel and Bazalgette, Sir Walter Besant, and Sir Sullivan—truly, as the author says, "a curious col "—are all to be found on the Victoria Embankment, the author declares, they are "known only to the rs in the Embankment Gardens, who, being generally on the seats, seem hardly to profit by their presence." difficult to suppose that any of these statues can be classed among those that are "little known." Strange ns are mentioned: "We have Besant, but where is Burns certainly is here, but why not Scott? Mrs. s, but no Garrick; Bacon and Milton, but neither r nor Chaucer; and in the city that he loved so well Lamb lives only in memory." Dickens expressly desired that there should be no statue of him; but why is there none to Thackeray? Perhaps the broken nose about which he was so sensitive baffles the sculptor. Few will disagree with the author's opinion that the following are "splendid examples of the sculptor's art": Le Sueur's Charles I. at Charing Cross; Grinling Gibbons's James II. by the Admiralty; the Great Equestrian Richard I. by Marochetti, in front of the House of Lords; and Mr. Hampton's statue of the late Duke of Devonshire, but recently unveiled in Whitehall. For the replica of Bird's statue of Queen Anne, in front of St. Paul's, however, which Mr. Chancellor is half inclined to place in his select list, we cannot pretend much admiration; it is almost grotesquely out of scale with the great cathedral. And whether or not the statue of Henry Irving in the Guildhall is "little known," it is worth looking at. With regard to Chaucer, the author's statement needs some slight qualification. At the junction of Hamilton Place and Park Lane there is a fountain by Thomas Thornycroft dedicated to "the Fathers of English Poetry," among whom Chaucer is, if recollection serves us, rather finely represented.

Westminster's Three "Cathedrals."

DURING the last month or two workmen have been setting up the steel framework of the big dome which is to crown the Wesleyan headquarters. Commenting on the proximity of Messrs. Lanchester and Rickards's building to Westminster Abbey and Westminster Cathedral, a writer in a provincial newspaper observes that there will thus be clustered together three lofty structures, each of which embodies an important branch of the Christian Church in dignified and stately form. By deliberate choice and design, the three centres of organised religion in the West End of London differ at least as widely in outward appearance as the doctrines held by their supporters, and thus there is no appearance of imitation by the newer buildings, but rather an effective contrast. This is obvious when they are viewed from close range, as well as from a distance. The grey Gothic towers of the Abbey do not suffer in imposing grandeur by the nearness of the dome-topped Renaissance bulk of the Methodist headquarters, nor, assuredly, by the towering brick campanile of the Byzantine headquarters of Roman Catholicism in England, and, as viewed from several miles away, the effect is rather striking. When the dome receives its outer "skin" of metal it will form more definitely than at present an easily recognisable and imposing landmark for aviators and others, easily visible above the smoke and mist of London. The one regrettable thing about the Wesleyan Hall (which may perhaps be regarded as the Cathedral of Methodism) is the placing upon it of brass plates and lettering in advertisement of the business uses to which portions of the building are being put.

Bedroom or Boxroom?

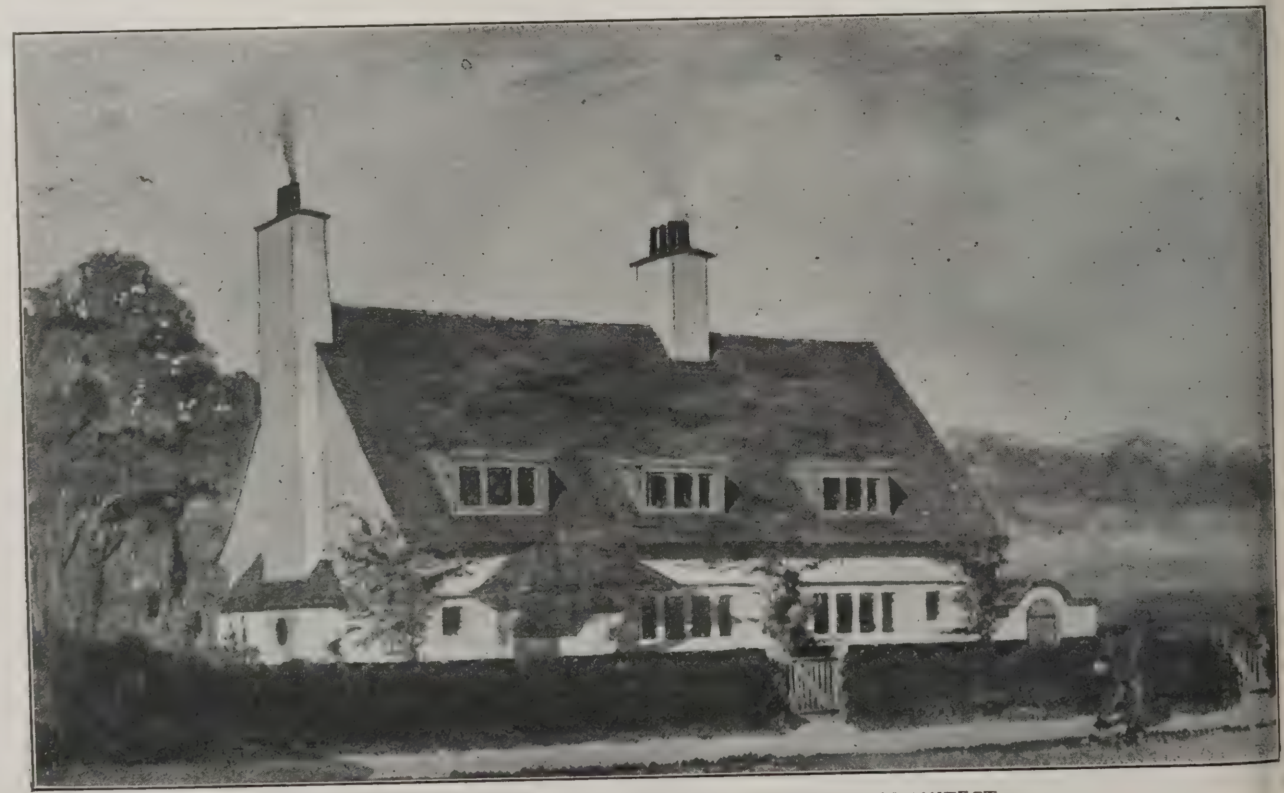
AN item in the annual report by Dr. J. King Warry, medical officer for Hackney, has attracted an extraordinary amount of attention in the Press. It is that in which he refers to certain rooms in a large number of three and four-roomed tenements in the borough. These rooms are intended presumably for bedrooms, although they correspond in structure to a ventilated and lighted box-room. These so-called rooms are small, lighted by an ordinary sash window, and provided with a hole in the wall about six inches square, which is guarded outside by a grating, but they have no fireplace or chimney flue. The occupants of flats containing one or more of these rooms recognised their uselessness. If the tenant can afford to keep a servant "living in," the room in question is allotted to her as her bedroom. The ventilating hole is promptly blocked up on the first appearance of a cold day, and she sleeps at night practically in a closed box, through which there is no circulation of air. If the occupier has a family, one or more of the children are put to sleep in the room, the hole in the wall is blocked up, and the same results follow as in the former case, but, being younger, the children suffer more severely from the vitiated air. Sleeping under such conditions would no doubt predispose to disease. The curious point of the construction of such living rooms is that it is perfectly legal. In the Building Acts for London there is no mention of bedrooms. Rooms are designated by the title "inhabited rooms" or "living-rooms." The term "inhabited" as applied to a room is defined in the London Building Act, 1894, as "a room in which some person passes the night," or which is used as a living-room, including a room in respect for which there is a probable presumption until the contrary is shown that some person passes the night therein or that it is used as a living-room. Living-rooms are, as will be seen, included in the above definition. The rules for the construction of habitable rooms are set out in Section 70. This section deals with the height of habitable rooms, the provision of windows, their position, size, and the portion to open, the floors of basements, rooms, and the provision of ventilation under such floors; also the construction of the floors of habitable rooms above stables and the separation of stables from staircases leading thereto. There does not appear to be any obligation to provide any habitable room with fireplaces. Especially is this the case with bedrooms. In the opinion of Dr. Warry, this is a great want in the Building Acts. No better means for the ventilation of habitable rooms can be suggested than a fireplace with a flue. In addition to ventilation, means of warming are also required in every bedroom at certain times of the year and at other times in case of illness. Some of the rooms now provided in tenement buildings are, in his opinion, totally unfit for use either as living-rooms or bedrooms.

Signs of Vitality in Architecture.

A REVIEWER in the "Morning Post" expresses the opinion that the present concentration of attention on the building of small houses, which is so marked a feature of modern architecture, seems likely to have an important bearing on the development of the art. England, he says, already is pretty thickly sprinkled with the country cottage style of house, and will soon be more thickly sprinkled still. Are we achieving a success in that line of architectur Well, we think if the reader will compare the buildings of day of that kind with the stucco villas of fifty years ago will at any rate admit that we are making progress. He w also perceive that the old Gothic idea of art as an express of life is a much better one to apply to ordinary domes architecture than the Latin idea of art as a matter of rule a precept. This is where the importance of this modern parture in architecture comes in. As a rule these coun houses are thoroughly sound, honest, and genuine in all th methods, structural and decorative, and they are also p fectly adaptable and of infinite flexibility in their meth and suggestions. These qualities they possess because t are in close touch with the needs of life. In their case t contact has been in some degree restored, which has done much for English architecture in the past, and already, a small scale, of course, but quite unmistakably, they be to display those signs of vitality which English architect only displays when it is in touch with the life of the c munity.

A Comedy of Reinforced Concrete.

REINFORCED concrete does not seem to be a promi material for the promotion of humour. The proc ings of the Reinforced Concrete Institute, for insta add but little to the gaiety of nations; they seldom or n yield a hearty laugh, although the irrepressible smiles greet the flashes of unconscious humour are of fairly frequency. It has been said that humour depends largel incongruity and unexpectedness. Hence perhaps the s hysterical laughter that rewards the silly and irrelevant jok of some great judge presiding over issues in which life o means of living may be at stake. Unexpectedness and in gruity are sufficiently conspicuous in an incident that just been related to us in the diffident but generous hope our readers may like to share in so rare and precio phenomenon as an ebullition of humour in association wit inforced concrete—humour which is perhaps all the enjoyable because it seems to be of the genuinely uncons and spontaneous variety. We have much pleasure in pa it on. Thus it is then: An eminent firm of reinforced con specialists received, a day or two ago, from a tailor in a



HOUSE NEAR STOKE POGES. C. F. A. VOYSEY, ARCHITECT.

of business, the following request: "May I ask the favour
list of the works in progress where your process is now
g employed? Could I be permitted to see work going on
paid a visit to any of these?" This looked like the first
t dawn of a business proposition. Surely a fair inference
n it would be that Sartor desired to be *resartus* as regards
business premises. He was therefore accorded the in-
nation and the permission he desired, together with such
lementary advice as an alert business firm, justly suppos-
itself to be in sight of a commercial opportunity, would
rally put forward. Thereupon Sartor seems to have
ised, with kindly but belated compunction, that his en-
y had excited expectations which he had had no intention
r of raising or of fulfilling. His reply is delightful in its
tesy, and in its unaffected organic or essential humour it
imply delicious. "I am greatly obliged to you," he
nptly replied, "for your very courteous letter. I am afraid
letter must have conveyed—quite unintentionally—the im-
sion that I was a prospective customer. I hasten to ex-
n the purpose I had in view. During many years I have
t up a large business in Clothing for working men, chiefly
ublic Works in all parts of the country. I like to think
ve served them thoroughly well. I have, however, only
able to do this by studying their requirements under all
litions, and just now I am anxious to find out how the con-
affects their Trousers, and what material is best for
work." That is the climax of the joke. Having had our
imate laugh at it, we can settle down to sincere admiration
hat follows: "A little time spent in watching the men
ld give me valuable hints. If after this explanation you
to renew your kind invitation, and will permit me to visit
vork at ——, I shall deem it a favour. If, however, this
irregularity which you can hardly permit, do not hesitate
ay no—I shall quite understand the difficulty." Such
ordinary enthusiasm for thoroughness, reinforced by a
eness of diction which out-Chesterfields Chesterfield,
l, we feel sure, meet with only one response, and hence
can be no doubt that we are on the eve of establishing
tifically some most important conclusions as to the re-
cement of workmen's Trousers; due attention of course
given to expansion joints, bending moment, and modulus
asticity.

"A Love of a Cottage."

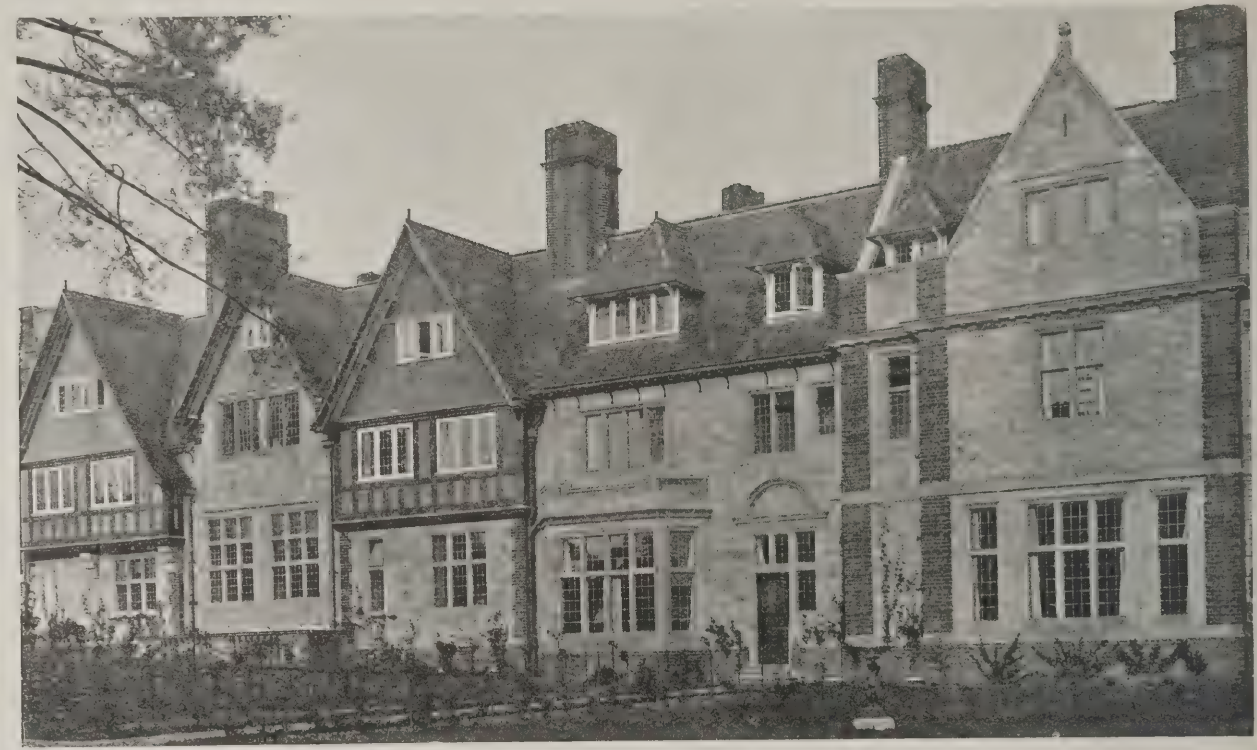
HE lady's point of view with respect to domestic interiors
is not always so well and temperately expressed
as it is by Mrs. Waldemar Leverton in a recent
of "Madame"; but in any case the ideas of "the spindle
on such a subject are valuable, because, whether for
or ill, they happen to be very influential. For the
shing and decoration of her ideal cottage, Mrs. Leverton
l favour a monotone scheme, and let it be a white, grey,
een cottage, according to fancy, these three shades being
suitable for summer use. Ivory enamel or green stained
ture would be inexpensive, but if one were prepared to
l a little more, and have some of that delightful grey
ture, a far more distinctive home could be obtained. In
White Cottage the living room will have an ivory stripe
paper and a laburnum frieze, a cream woven carpet, with
ps a little green and yellow introduced. The dresser,
w seat, and indeed all the paintwork throughout would
ry enamel, the draperies of cream Bolton sheeting for
rtières; and casement cloth for the windows. A table,
u, bookcase, and six chairs would be all the necessary
ure for the sitting-room, and these would be of ivory
lled wood, the cushions being covered with yellow
or casement cloth. The small bedroom would have
ory paper with a very narrow stripe, and a frieze of
e clematis, the larger bedroom a cream paper with small
r design and frieze of red geraniums or poppies. In
case a white enamelled suite and bedstead would be used, economy of space being effected by the use of corner fitment wardrobes instead of the bought variety. The bedspreads would be mauve and white, and red and white printed cotton, respectively, the floors of both rooms being stippled, washable Milanese rugs being used by the bedside and elsewhere as needed. Red and white would, of course, be selected for the larger room, purple and white for the other. The kitchen should have a white glazed paper, and as the cottage we have in view is for summer use only, would not require a floor covering, the boards being merely stained and polished, and then look very well. Mrs. Leverton judiciously counsels that "it is wise to secure the services of a good capable architect. . . You also save yourself trouble respecting the various notices, etc., which are demanded by the local authorities, by trusting to a competent architect; for all such matters necessarily vary with different districts." There is another respect in which Mrs. Leverton wins our heart-whole admiration: she does not once mention the odious word "cupboards."

The Condition of Glasgow Cathedral.

MR. A. T. OLDREIVE, H.M. Chief Architect for Scotland, in an interesting report on the condition of the roof of Glasgow Cathedral, after a careful examination states that there can be no doubt that if the proposed addition of stone vaulting over the nave, as shown in a set of drawings for a restoration in 1836, had been carried out, the result would have been the wreck of the building, as in the case of Holyrood Chapel Royal in 1768. About 1735 the original design of the roof of the cathedral was deliberately obliterated by hacking away the oak moulded ribs, carved work, and panels, in order to substitute the plaster ceiling. Mr. Oldreive is now restoring the roof as far as possible to its original condition, and is also inserting steel as a supplementary support. The cathedral of St. Mungo, commonly called Glasgow Cathedral, is one of the best examples of Gothic in Scotland. It is 330ft. long, with three aisles in both nave and choir, but no transepts. There are a fine sacristy and an especially beautiful lower church (not crypt) below the choir. This lower church, which is of the mid-thirteenth century, has ribbed vaulting which is esteemed as being equal in beauty to anything of the kind and period in Britain.

Lincoln's Inn Old Hall.

THE old Hall in Lincoln's Inn is at present in the hands of the builder, as a new doorway is being put in on the west side. Historically, this building is one of the most interesting in the neighbourhood, although to the undiscerning eye it is rather overshadowed by the New Hall and Library, which is not only very much larger in size, but also more conspicuously placed, backing as it does on Lincoln's Inn Fields. The Old Hall is the oldest building in the Inn, having replaced the Bishop's Hall in 1489. But, owing to various alterations and restorations, there is little left visible of the original. Mr. John W. Simpson, the architect to Lincoln's Inn, informed a "Pall Mall Gazette" representative that careful examination of the exterior of the building had shown him that further restoration to repair some of the careless treatment of the stonework in the past would cost a prohibitive sum. In some cases stone mullions had been replaced with plaster. A new doorway is being put in, as the existing entrance is insufficient in view of the number of students who are attending the lectures arranged by the Council of Legal Education. It is odd to be told that the bricks and tiles used in the gateway and hall were made from clay dug from a piece of ground on the west side of the Inn, and called the Coney Garth, because it was well stocked with rabbits and game. The gatehouse is a fine specimen of Tudor brickwork.



HOLLINGTON HOUSE, NEWBURY: WEST FRONT. ARTHUR C. BLOMFIELD, M.A., F.R.I.B.A., ARCHITECT.

SKETCHBOOK AND CAMERA.

DURING the holiday season, the architect, whether he travels in his own country or abroad, always takes with him his sketchbook or a camera—perhaps both. Otherwise he would think that he had spent an unprofitable holiday. He feels that he must bring away with him some tangible and enduring record of the buildings that, being a lover of his art, he is bound to visit. It is very true that of most buildings he can obtain ready-made views; but these are in many ways unsatisfactory. They almost invariably ignore the point of view, or the detail, that has most appealed to him; and although they may be of technically perfect execution, they cannot be, in the nature of things, nearly so interesting to him, nor to his friends, as the perhaps feeble sketches and the possibly indifferent photographs, that he makes for himself. He may be, of course, as so many architects happily are, a skilful sketcher or an expert photographer, and then he will produce mementoes that are indeed worth the cherishing; but in any case the product of his own eyes and hands will, by reason of the intense impressiveness of the act of selecting the object and view-point, and of the further concentration ensured in the work of securing the image, be immeasurably more valuable to him than anything of the kind that can be bought ready-made; and, at the worst, he is able to say of his wretched sketch or inferior photograph, "A poor thing, but mine own"—despicable, possibly, as a work of art, but nevertheless valuable as a stimulative record of things seen.

The supposed antagonism between the artist and the photographer should not be allowed to intrude itself when the architect is debating with himself whether he shall depend on pencil or on camera for records of his holiday. He should use both—now one, and now the other, as occasion may require. In the country, with plenty of time and abundance of elbow-room, the sketch-book is appropriate. It is beyond controversy that the sketch, produced laboriously, line by line, training the eye and hand, and employing heaven knows what subtle mental processes—of analysis, synthesis, comparison, measure, proportion—stirring the memory and stimulating the imaginative insight—is in that sense immensely more efficient than the photograph, although the record is less strictly accurate. But when time is short the street is crowded, and sketching is impossible, the h camera secures many a "bit" that one would be sorry to le unrecorded.

It need not be a large or an expensive instrument. C holiday, one does not want to be cumbered with a bo heavy plates, a tripod, and a weighty combination of h wood, brass, and glass. These things may be really neces if one is out to make architectural pictures; but they ca happily abandoned if the record or *aide-mémoire* is all is required. We have known some architects to do rem ably well with no more pretentious instrument than a h guinea film camera, of which the size and weight were a significant as the price; but they were careful to work within the restricted limits of such a primitive appara which is hardly equal to anything beyond snapshots in b sunlight. These, however, will give quite excellent of buildings; and there are, of course, many expe cameras of literally pocket size which will serve the same pose with a higher degree of efficiency. These small pl are very convenient for storage, and are often capable deserving of enlargement.

It has been claimed that photographs are an excellen to draughtsmanship, affording hints on perspective, and shade, and general values; but the human eye an camera lens do not perceive and register in the same way certainly the stiffest and most unconvincing of sketche those which are made from photographs. The architect accumulates by means of the camera a useful store of d that attract his attention, will, when adapting them to appropriate purpose, remember that in sketching from it is necessary to interpret rather than to copy, if he avoid the rigidity and soullessness which is so charact of the products of the camera. But it is in suggestiven motive and treatment, rather than in what may be strictly called imitation, that the photographs of details their most direct legitimate purpose; and beyond that are a perpetual refreshment to the eye and stimulus mind.

A few sketches, and a few snapshots, accompany paper. The latter were taken by various hands, and i case with very inexpensive cameras.

RUSHBROOKE HALL, SUFFOLK.

(See Centre Plate.)

e interesting old English home known s Rushbrooke Hall stands on an eminn in a picturesque park of 195 acres, d ining the village of Rushbrooke, and v looking the valley of Bury St. und's, from which town it is distant b ıt three miles.

e Rushbrooke family, according to a r in the "Bury Free Press," owned property for three generations immedite succeeding the Norman Conquest. rn them it came into the hands of the eyn family, in whose possession it reied for 300 years, passing from them marriage) to the Davers, and at last ning to the family which had origin-l owned it, of which the present repreitive is Mr. Robert Rushbrooke.

e present hall, which is one of the few lings left with its moat still in perfect ition and filled, forms three sides of a rangle, open to the south. The centre west wings belong to the Elizabethan d, but the east wing was erected in eign of King John. It is quite one of nost picturesque places in this part of astern Counties, and one in which the King Edward VII. took considerable est. Queen Elizabeth undoubtedly d there.

e original structure has undergone ations and additions from time to n and was considerably enlarged in n Elizabeth's reign, and still further l to and much altered in appearance en the years 1703-1722, when its bethan character was greatly modid by the introduction of a strong gian feeling, greatly to the detriment older features. Stone mullioned win- and lead-light casements were red, and large frames and sashes inl. Portions of the old stone heads, s, and sills are still to be seen around resent windows.

e principal entrance porch of hewn ack stone is of interest, and in excelpreservation. Unfortunately the old over this entrance has lost its internal anism, but the bell upon which the were struck is still in existence. house itself is red brick of delightful and colour.

e existing decorations are representaof Italian, Adams, and Grinling ns mode of ornament. In the west a great deal of Tudor work in oak moved to the village church of Rushe by one of the Rushbrookes.

e present alterations and additions been carried out under the direct vision of Mr. Melville S. Ward, R.B.A., of 104, Victoria Street, Wester, who has endeavoured, with the val of Mr. Rushbrooke, to retain as practicable all the old materials and teristics of the beautiful building.

attempt has been made to imitate the details of the old structure, except as repairing and making good was ned, but all the new additions to the ing have been carried out with the f blending the old and new work possible, at the same time making te easy for the antiquarian of the to trace what is really the old strucom the work lately executed. Where one work could be used, this had done in the making good, and the ss has been carefully extracted from rished lead in the remaining old casements, and used in the new

Considerable care was exercised in the selection of the bricks, tiles, etc., employed, and the old hand-made tiles of the roofs were carefully removed and replaced after the main timbers had been thoroughly overhauled and boarding put on. This part of the work was entrusted to Messrs. Ames and Hunter, of London.

The east wing, where a great deal of the most important work had to be done, has had considerable additions made to it, in order to bring the domestic accommodation more up to modern requirements. It is here that a new wooden bridge has been made exactly similar to the old one which carries the main electric cable and water pipe over the moat.

This wing, dating back to Henry VII., is a good example of the late 15th century and early 16th century work, and is by far the most interesting portion of the structure.

In making the necessary additions, the greatest care was required owing to the age of the work, and these additions had to be treated in a manner to prevent the modern improvements spoiling the old-world appearance of this elevation.

The kitchen, which has a floor of wood blocks, had been remodelled and greatly increased in size, a double range being placed in the centre with underground flue connected to the old one. This was done partly for the requirements of modern cooking, and partly to avoid excessive increase of heat over the old oven grate, and the possible risk of fire in consequence. The scullery, with tiled floor, has been transformed and fitted up with every accessory. The old brew house, which had a fine old copper vat and underground pipes to the old beer cellar, has been made into a spacious servants' hall, which is reached by a corridor from the kitchen The pantry, housekeeper's room, butler's room, and other domestic and necessary offices have been arranged as compactly and conveniently as possible.

In nearly every case where old blocked up windows could by careful planning be again utilised, this has been done, necessitating, however, in most cases new stone jambs, heads, sills and mullions, although as far as practicable portions of the old Tudor stone windows were used, which were discovered buried in the walls of the west wing, where they had been used evidently to save building materials, when this wing was added to about 1703. Much of this old stonework, however, was too badly damaged for it to be used for the purpose of the repairs.

In forming a new and much required staircase in the east wing, an old Tudor open fireplace was uncovered, and was left undisturbed, but the back of it was removed and a stone window inserted, adding quite an interesting feature to this portion of the alterations.

The way into a secret chamber in the S.E. turret was also found up a disused flue in the brew house, but as this flue was required for the use of the new servants' hall, the brickwork with which it was blocked up was left undisturbed, and a way into the chamber formed through a trap-door in the ceiling over. It is probable that this secret room had been used for the purpose of hiding priests during the persecutions in which the Abbey in Bury St. Edmund's suffered so severely. At the end of this wing, too, on the first floor, is to be found a charming room panelled with a great deal of Tudor panelling.

The hot-water supply, and the warming of the house with radiators, has necessitated a large heating chamber, which has been formed below the level of the ground floor and partly below the level of the moat. This work has been no small undertaking, and in order to avoid a new chimney stack, an old one has been made use of by inserting fireproof pipes in the old brick flue. The two supplies have independent boilers; the hot and general water supply have been carried out by Messrs. McDowall, Stevens and Co., of London, and the heating apparatus by Messrs. Messenger and Co., of Loughborough.

It was found that the old well was quite inadequate for the great demands of the new domestic and sanitary arrangements, so a new well was constructed, the depth of the boring exceeding 250 ft., and powerful pumps were installed, worked by a petrol engine. These lift the water to a specially constructed storage tank, an automatic device being arranged for starting the engine when the water falls below a certain level.

The electric lighting of the whole of this old English home was placed in the hands of Messrs. Mann, Egerton and Co., of Ipswich. The gas suction principle has been adopted for the full supply, and the engine develops 21 h.p. Something like seven miles of wiring has been required for the installation in the house alone. A new engine-house has been built for both these engines. The length of wire required for the electric bells has also been very great.

In carrying out the new drainage, unsightly external pipes, etc., have as far as possible been avoided. The working out of this portion of the alterations was

LLANBEBLIG CHURCH, CARNARVONSHIRE. SKETCHED BY I. MERVYN PRITCHARD

(See "Sketchbook and Camera," page 220.)

MOELFRO.
(*See " Sketchbook and Camera," page* 220.)

anything but an easy matter, the moat representing a most uncompromising obstacle owing to its depth, and the difficulty of getting the necessary falls to a spot selected for the septic tanks some 500 yards from the building.

The central block embracing the main entrance large hall, dining room, library, and facing the larger court yard has needed little but general repairs, but the back portion has been entirely remodelled. The billiard-room has been fitted with a new stone mantelpiece and opening of Ketton stone and large dog grate, and has oak panelled recesses on either side.

The old retainers' dining hall has been converted into a smoking room, and another room has been made into a boudoir. This work adds considerably to the number of the reception rooms. In each case oak flooring has been laid.

In this wing, on the first floor, is the long gallery or ball room, which, with the fine main staircase, hall and gallery, provides splendid opportunities for hanging the valuable collection of family portraits for which the hall is famous.

The west wing, from which the oak was removed for Rushbrooke Church, now provides excellent bachelors' quarters.

Old windows, blocked up in the days of the "Window Tax," have been opened up, and for the Georgian dummy windows practicable windows have been substituted, greatly brightening, externally also, the appearance of the entrance court.

The old ghost room, with its interesting bloodstained floor, has been formed into a bath room, but the old boards have been relaid so as to retain the old interest in its history.

A further handsome new oak staircase has been inserted in this wing, and the old oak timbers in the roof above have been carefully preserved, making a most interesting feature, and exposing to view a fine example of old English oak roof construction with its shaped wind braces.

The addition to the house of a further 21 well-lighted servants' bedrooms, making 47 bedrooms in all, 8 bath rooms, and linen room fitted with hot water pipes, has been carried out in such a manner that few, if any, of the old admirers of this building would realise that such an extension had been made. Old Tudor dormers have been utilised, and all new windows absolutely necessary for such an extensive alteration have been rendered less obstructive by making use of the double roof of the central block caused by the alterations carried out between A.D. 1703 and A.D. 1722.

The general contractors for the execution of these works were Messrs. Grimwood and Sons, of Sudbury.

SYSTEMATISED BRICKLAYING.

At the Birmingham meeting of the Institution of Mechanical Engineers, an account was given of some record building performances achieved in America by a study of the motions usually employed in laying a brick. The investigator had found that by carefully arranging materials, tools, and the position of the workman, three-quarters or more of the usual motions could be dispensed with. He had offered first-class men largely increased wages to work on the new lines, taught them the exact sequence of motions to be made, and insisted on their following a prescribed routine. As a result he had obtained three or four times the customary output for an equal or less expenditure of energy.

The subject, says a writer in the "Yorkshire Daily Post," has not aroused much interest in this country, but amongst American works managers it is the topic of the moment. Motion study itself is accepted as a valuable instrument of industrial
efficiency; its advocates are not cont
to let it rest at that. They claim tha
provides a basis for a new science of m
agement. They have extended and ad
to its original principles and framed th
into an elaborate system, covering ev
phase of productive activity, whereby, i
claimed, industrial efficiency can alone
secured. The critics of "scientific m
agement" assert that it is in no sens
science, but merely an assemblage of
tain useful mechanisms. The true scie
of management, they point out, must c
not only mechanism but human na
also.

The pioneer of the new system was
Frederick W. Taylor, a man of undoub
organising and administrative capa
who some ten years ago took up the
of increasing the output of the Bethle
Steel Works. He set to work along n
lines. Instead of speeding up machi
firing incompetents and idlers, and dri
or stimulating men to greater phys
exertion, he set himself to investigate e
motion that a man performed in carr
out any given piece of work. Having
his facts, he proceeded to analyse the w
operation with a view to eliminating n
less motions and useless effort. He
drew up schedules, describing in min
detail how each succeeding operation
to be performed and how long it w
take, and these were issued in the
of "route cards" to the men. Every
must henceforth work by the card, o
He established a planning departmen
the studying of motions and the dra
up of schedules. Its function was lite
to do all the thinking, leaving the m
perform mechanically, in accordance
a rigid time-table, the motions it
prescribed. To this basic innovation
Taylor superadded such further princ
as "functional or divided foremans
and the "differential rate."

The system, as may be imagined,
not established without conside
opposition; but established it was,
with successful results. The routine

PLAS BERW, ANGLESEY.
(*See " Sketchbook and Camera," page* 220.)

The wynds are alleys or courts which often connect parallel streets.

ENTRANCE TO TOLBOOTH WYND, EDINBURGH.
(See "Sketchbook and Camera," page 220.)

doubtless unpalatable to the men, but rought them higher pay without in- ised physical effort, and in the end they pted it. Its use has been extended in American steel industry, and disciples he invention have applied it in other es.

he experiments carried out by Mr. nk B. Gilbreth in connection with the ication of motion study to the build- trade are already classic in America. book on the subject, "Motion Study; ethod for Increasing the Efficiency of Workman," was reviewed at consider- length in the Journal of May 10th, , when Mr. Gilbreth's system was fly summarised. The present account of ims and methods, however, may serve give a broader comprehension of a ement that sooner or later will no t receive serious consideration in this itry.

icklaying is one of the oldest of the hanical arts. It has been practised for sands of years through every his- al area by nations barbarous and ised. Here if anywhere, therefore, it it have been supposed that men had overed the easiest and quickest way of orming their task. Yet by the applica- of motion study Mr. Gilbreth suc- ed in revolutionising the art of brick- ig.

began by observing and tabulating motions performed by a workman in peration of laying a brick. They were n number. He stepped toward the ar, reached for mortar, worked up the ar, stepped towards the brick pile, hed for a brick, chose a suitable brick, so on, ending by tapping down the , cutting off the mortar, and dispos- of it. Mr. Gilbreth began by arrang- mortar boxes and brick piles at four intervals on the scaffold, so that step- was unnecessary, and brick and ar could be picked up simultaneously. nsisted on the mortar being free from les, and kept at exactly the right con- ncy, so that working up and tapping l be dispensed with. He had the urer choose the bricks to suit the work. taught the workman to throw the ar into place without pause as he ght it from the box, follow immedi- with the brick, and only cut off the ar from the joints at every second . By these means he reduced the ber of motions at once from eighteen ur and a half.

Good as was this result, it was but the beginning of his efforts. He saw that if the bricklayer was to work without fatigue he must not be compelled to bend down for bricks and mortar. He therefore provided a bench on which these could be ranged at about the same height as the top of the wall. It was also obvious that he must have a scaffold to stand upon, which could be raised, together with the stock bench, as the wall grew. He therefore provided an adjustable scaffold with platform for bricklayer, bench for stock, and platform for labourer.

The scaffold was so designed that the uprights were out of the bricklayer's way. His feet rested on unconnected planks, the spring of which assisted his movements. The labourer's platform was at just such a level below the stock bench as would permit the easiest possible handling of the material.

He saw that bricks could not be handled with economy of effort two at a time. Wooden trays were therefore provided, capable of holding from 70 lb. to 90 lb. of bricks each. On these the lower-priced labourer laid the bricks right face up to save the higher-priced man having to toss or spin them in his hands. He laid these trays on the stock bench in the most convenient position for the bricklayer, either to reach round for them or lift them bodily on to the wall. The elevator for raising the bricks and mortar was arranged so that it could, when desired, discharge above the top of a staged wall so that the bricks and mortar could always be wheeled downward, and the empty barrows upward. The barrows were specially designed to economise effort. Another important innovation was the fountain trowel, whereby mortar for twenty-one bricks could be picked up, carried to the wall, and spread at one operation, without dropping the ordinary trowel, which was used as a handle for the other. By these and other devices Mr. Gilbreth succeeded in reducing the motions from eighteen to one and three-quarters.

He had trouble with the unions, but was partly able to win them over by pointing out that brickwork was rapidly being superseded by concrete, and that nothing but economy resulting from improved methods could save it from extinction. He had great difficulty in getting the men to follow the prescribed routine. They had to unlearn as well as to learn. They were sure that the new methods were slower than the old until convinced by actual demonstration. Every motion had to be **deliberately taught and enforced until** it became a habit as confirmed as those it **supplanted.**

Deducing principles from his experiences in this connection, Mr. Gilbreth comes to the conclusion that every element that makes up or affects the amount of work that the worker is able to turn out must be considered separately. He terms these elements "variables," and groups them in three main divisions. The variable of the worker include such items as brawn, experience, habits, health, nutrition, temperament, training. The variables of surroundings, equipment, and tools include appliances, clothes, temperature, ventilation, material, union rules, etc. The variables of motion include automaticity, combination, sequence, cost, direction, effectiveness, speed, etc.

This is all beautifully scientific; but is human nature strong enough to stand **it?**

In its kind, this staircase is quite unrivalled in England as a perfect example of Norman work. It was formerly a part of the Aula Nova (twelfth century), of which the site is now occupied by the King's School.

NORMAN STAIRCASE, CANTERBURY.
(See "Sketchbook and Camera," page 220.)

CORRESPONDENCE.

The London Building Law.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I notice that in the current issue of your paper you have a leading article on "Building in London," a newly issued book for the greater part of which I am responsible. While much appreciating the recognition thus given to the importance of the book, I feel I must ask for the hospitality of your columns in order to deal with one or two points raised in the review.

The first and probably the most important point is that with regard to the defining of the general line of buildings in London. The reviewer quotes my statement in the book to the effect that in this case the point to be determined is one of "fact," and one which is required to be considered without any reference to the consequences which a decision will entail. He, however, adds as a rider, "consequences to private owners, that is, the consequences to the public being predominant." But this is just what I did not mean to convey. If a question is one of fact, no interests, public or private, are material to the consideration. In the case of in re the L.C.C. and the London Building Act, 1894, Mr. Justice Wills disposed of this suggestion that the interests of the public should be considered in the defining of the general line. He said (see Architects' Law Reports, vol. II., page 121): "It seems to me that it is a matter that ought not for one moment to enter into the consideration of anybody who is fixing, by looking at the street or by hearing any evidence that may be necessary, and so on, what is the actual general line of buildings." The reviewer also criticises the statement that in all cases in the defining of the general line the question is one of fact, and his remarks appear to imply that the superintending architect has power in the case of an unbuilt-on street to prescribe a building line. But a perusal of section 22 of the 1894 Building Act will show that the power given to the superintending architect by that section is that of defining "the general line of buildings," and, if there are no buildings, there is no general line to be defined. The general line is not in existence until buildings are erected.

I notice that I am quoted as saying that the air space requirements render it impossible to erect a terrace of domestic buildings on the convex side of a curved street. What I said was that it is practically impossible to do so without applying to the Council for consent, and this I believe to be the case.

Then there is the phrase "exclusive of two storeys in the roof," which appears in section 47 of the 1894 Building Act, a section which limits the height of buildings in ordinary cases to 80 ft. I say that this phrase is redundant, and am asked why. The evidence of the redundancy of the phrase is that the requirement would remain the same if the phrase were omitted. It is the statutory height of a building which is under consideration, and this is defined as, in ordinary cases, the vertical measurement from the footway to the top of the parapet; the roof does not enter into consideration in the measurement of the height of a building. There are indeed some persons, and the reviewer seems to be one of them, who consider that, because of the existence of this phrase "exclusive of two storeys in the roof" in section 47, buildings of 80 ft. in height may not have more than two storeys in the roof. I doubt very much whether the section is to be thus read, and anyhow such a reading is of no practical value, as a building 79 ft. 11.9 in. is obviously not affected by the requirement, and if it is a building of the warehouse class, there is no limitation of the number of storeys that may be constructed in the roof. Domestic buildings are, of course, governed by section 62 (1) of the 1894 Act, which prohibits the construction of more than two storeys in the roof of a building of this class.

I find that an opportunity occurs of justifying the construction of a clause in the 1894 Building Act. Such opportunities are too rare—in fairness to that much abused Act—to be missed. The reviewer criticises the requirement (see Section 56 of Act) that, irrespective of the span, the bearing of a bressummer at each end on a pier or stanchion must be 4 inches in addition to its bearing on a party or external wall. Such a bearing may certainly be undesirable for bressummers of a large span. But the section goes on to give the district surveyor power, in his discretion, to require a bressummer to have such other storey posts, columns, stanchions, piers, or corbels as may be sufficient to carry the superstructure. Consequently the district surveyor has indirect power to deal with all details affecting the strength of bressummers, and the construction of a bressummer is more safeguarded than that of any other feature in a building. I notice that "beam" and "bressummer" are spoken of in the same breath, but there is an important distinction. The provisions of section 56 of the Act apply only to bressummers, and a bressummer is defined as "a wooden beam or a metallic girder which carries a wall." Ordinary floor beams in buildings which are not public buildings, and not buildings of steel-frame construction, are subject to no requirements except those of Part IX. of the Act, which concern dangerous structures.

I feel I must apologise for having taken up so much of your valuable space, but the London building law is admittedly a most complex and troublesome subject, and if points which are liable to cause misapprehension are allowed to go unexplained, the difficulties of the ordinary person in obtaining a clear knowledge of the law will be greatly intensified.

HORACE CUBITT, A.R.I.B.A.

[One or two instances in which Mr. Cubitt says his meaning has not been fully represented (e.g., in the matter of the letter of the law as affecting buildings on curved streets) are only the result of necessary brevity of language.

It may be true that when no building has yet been erected on a street there is no "building line" to define; but Mr. Cubitt's own illustration of the definition of building line in a part of Fulham Road, in the plan inserted at page 70, shows conclusively that the definition of the building line, whatever the lawyers may say, is not always a "statement of fact"; in this case it was clearly a reasoned judgment on the part of the superintending architects as to what the line ought to be, set aside by a different judgment on the part of the Tribunal of Appeal.

We see what Mr. Cubitt meant by saying that the phrase "exclusive of two storeys in the roof" is "redundant"; there he is right, no such sentence should have been inserted; but as it is inserted, it unquestionably means that there cannot be more than two storeys in the roof, if there is any meaning in language at all. The absurdity of the wording, as we endeavoured to point out, lies mainly in legislating by feet measurement for one part of a building, and by storeys another part, as if all storeys had a defin height.

Mr. Cubitt's defence of the inadequ provision of 4 in. bearing on the wall all bressummers of whatever span, pointing out that the surveyor has pow to require extra support for them where thinks necessary, is no defence at all; requirement is a crude one to begin wi and ignores constructional principle. T bearing on the walls ought to have be specified as a certain proportion of span of the bressummer, "or in any ca not less than 4 inches."]

DETAILS, OLD AND NEW.—X

Decimus Burton's Arch.

This structure is commonly regarded Decimus Burton's most enduring mo ment. But while it is dignified and p portionable, graceful and elegant—qua ties for which one is duly grateful—it evident that the author was rather faithful to classic traditions. His de follows almost slavishly the Greek mod and has been not altogether unjus described as "a transcription from 'Stu and Revett'"; and about the whole des there is a frigid austerity of correctn which almost suggests lack of creat power and of courage. One note originality is the absence of impost mou ings to the arch, and as this is rather the nature of a defect—since one looks stinctively for the line of demarcat between the springing and its suppo this solitary departure from sheer im tion would have been better unessay Curiously enough, impost mouldings shown on the original design signed George IV., in which also a very shal plinth appears instead of the exist podium beneath the colonnade. dainty carvings on the frieze had bec much weather-worn, and were repai rather more than two years ago.

Stockport Police Court Competition.

The prizes in the recent competi for a police station and court, Sto port, have been awarded by Profe C. H. Reilly, the assessor, as follo Selected design, Messrs. J. Theo. H day and Claude Paterson, Manche and Stockport; 1st premium (£1 Messrs. Appleyard and Quiggin, Li pool; 2nd premium (£50), Messrs. S and Sons, Manchester and Stockp The buildings are estimated to £25,000.

New Metal Filament Lamps.

A new metal filament lamp has been placed on the market by the Bri Thomson-Houston Company. It re sents a further development of "Mazda" lamp, and is chiefly rem able for the employment of a filam of solid-drawn tungsten wire instea the pressed or "squirted" kind which hitherto been compulsory. The covery that it is possible to render t sten in a ductile form was made after three years of continuous lab tory experiment. In the new lamps, of breakage is considerably reduced the absence of the rigid connect which, by reason of the brittle natur tungsten, were necessary to the safet the filament. The drawn filament many advantages over the other k it is continuous, and is not subject t variations which are characteristic o ordinary type of metal filament.

FIRE PREVENTION NOTES.

The Fire at the Carlton.

Hotel fires in London are fortunately very rare, and are seldom so serious as that which broke out t the Carlton Hotel on August 9th, when amage estimated at £30,000 did not re-resent the full extent of the disaster, ince, unhappily, an American actor amed Finney lost his life. The hotel, hich was opened in 1899, is built of Port-and stone in French Renaissance style, nd stands on the original site of Her Iajesty's Theatre. His Majesty's Theatre ow adjoins the hotel on its northern side, nd was for some time in imminent dan-er of taking fire, but ultimately was ound to be but little the worse for the ex-erience. The fire in the Carlton itself as confined to the upper storeys, where is thought to have originated in a lift ell, but this appears to be mere conjec-ure; and there would probably have been o loss of life but for the unlucky accident hat the victim of the fire happened to be n his bath when the alarm was given, and e was suffocated when endeavouring to scape.

Internal Precautions.

At the inquest on Mr. Finney, the fire precautions adopted at the hotel were described by Mr. P. Lowe, the resident engineer, and their ecapitulation here may be useful. In the asement there was a central battery oper-ing three large fire alarm bells— one on e sixth floor, which was the floor above e one on which the body was found, a cond on the service staircase, and other on the central grand staircase, hich led from all floors to the hall. The ngs of these bells were 12in. in diameter, d were tested every Monday morning. here was also a bell on each floor over e hydrants, and these were called "local arms." When the hotel was occupied e directors considered that if the large arm bells were started on the slightest ovocation the guests would be unneces-rily alarmed, and the local alarm bells ere sufficiently large to carry all round e four corridors. The "push" of these lls also operated a bell in the hall-rter's control office, where there was an dicator, and also operated a bell im-ediately opposite the engine-room, which as a signal to the engine drivers to itch on the fire pumps to full speed. this means they got a very powerful essure of water, much more powerful an they could get from the water com-ny or any outside supplies. On each or were hydrants commanding all the ridors and ready for immediate use. ove the hose were buckets of water d a bucket of sand. There were also ter cabinets and barrel pumps and hand mps which could be reeled everywhere. the service of the waiter were three kets on the right hand side of the lift. ery morning the firemen tested all the liances. The London County Council mmittee had seen the appliances tested, l had commended the hotel on the great e taken. On the night of the fire all bells answered, and the staff of por-, who were well drilled in fire work, hed to the spot from which the alarm l been given. There were fire-escape rs outside the building, and Mr. Fin- had previously occupied a room from ch, in order to reach the escape stairs, would have to turn to the left. On this asion he was in another room, and by ning to the left from this room he would be walking away from the escape stairs towards the room in which his body was found. He had occupied what might be called his old room during the whole of last year's season. He was probably under the mental impression that he was in his old room, and hence he turned to the left to get to the escape, but unfortunately walked away from it.

Fire-resisting Construction.

The hotel is of steel construction, with cement fireproof floors. The corridors, however, were wood-panelled except the third floor. The directors had a scheme of plaster panelling on hand. Asked why wood panelling had been used, Mr. Lowe said he was glad the coroner had raised that question. At the time the hotel was being constructed there was a strike of plasterers, and as delay would have been caused the directors imitated the plaster by wood panelling. That was passed by the usual authorities at the time. The fire staircase to the roof was visible to all the guests, and led out in several directions.

The Brigade's Good Work.

The Carlton is seven storeys high, and therefore one of the tallest buildings in London, and the fire brigade are greatly to be commended for the courage and skill with which they surmounted the difficulties thus presented; and seven or eight of them have been officially commended for the aid they rendered in assisting the inmates to escape. There were at the time, it is said, 300 guests on the books of the hotel—among them several who, from infirmity or panic, would have been unable to escape unaided. What would have happened if the hotel had not been built on comparatively modern principles is for shuddering conjecture; in that case combustion must have been much more rapid, and the means of escape much less efficient, while the firemen would have found their task immensely more difficult. As it was, not a single death would have occurred but for the singular ill chance of the victim being in his bath in the upper part of the hotel; and even thus he could have got away but for the very explicable mistake consequent on his having formerly occupied a different room. A further vindication of the system is found in the fact that the main fabric is but little damaged. Nevertheless, it must not be forgotten that the hotel was built twelve years ago. The proprietors are certainly to be congratulated on having kept so well abreast of modern developments as the evidence at the inquest seemed to indicate; and in the rehabilitation, every up-to-date means of fire-prevention will doubtless be adopted. The hotel was built under the supervision of Messrs. Isaacs and Florence, who evidently availed themselves of all the resources that were then at command, and who, moreover, had the good taste to carry out in its integrity the design for the façade which had been prepared for the whole corner block by the late Mr. Phipps.

How the Plasterers Promoted Fireproofing.

The reference to the casual substitution of wood-panelling for plaster, in consequence of labour troubles, recalls the fact that 1899 was the year of "the Master Builders' Magna Charta," in which they sought to check the extraordinarily aggressive policy of the operative plasterers, who had assumed an attitude that was beyond all endurance, striking on the smallest provocation, boycotting certain firms, refusing to work with non-unionists, declining to meet the employers in conference, and acting generally in a most arbitrary and tyrannical manner. On March 4th, 1899, the employers locked out all unionist plasterers, and men were imported from the Continent. The lock-out lasted for three months and was finally settled by arbitration, the employers obtaining all they demanded, and here and there a bit over. The men lost more than £20,000 in this struggle, and their order has lost untold gold in the sequel; for, by making plastering such a difficult and precarious business, they set people thinking seriously as to whether or not plaster was indispensable. They were not long in discovering substitutes, of which the use is still increasing; those of more recent date being very valuable additions to the resources of fire-resisting construction.

Roof Wire Dangers.

One incident of the fire at the Carlton Hotel carries with it an obvious lesson that ought to need no enforcement. Two heavy telephone wires, attached to two standards on the roof of the hotel, were, it was somewhat confusingly reported, "removed by the workmen of the Gerrard Exchange. The first fell into the street, and the second, in its fall, broke the lamps on the left side of the portico of His Majesty's Theatre. They were afterwards hoisted to the roof of No. 7, Haymarket, out of the way." Presumably the workmen let down these wires with as much care as the circumstances would allow, and probably they risked their lives in performing this very useful service. But it is not necessary that these wires should occupy such dangerous positions. Fire or no fire, they are a perpetual menace, not only to the workmen who are obliged to perform extraordinary feats of skill and daring in order to keep them in repair, but also to the casual passer-by; while to the dangers of a fire they add peculiar elements of obstruction and risk. Compared with these serious disadvantages, it is a minor matter that exposed wires ruin the appearance of a building. They should be decently interred out of sight in underground conduits, in spite of all objections on the score of expense.

Swiss Mountain Fires.

Of the many fires which were recently raging in different parts of Switzerland, the most serious was one upon the Italian frontier, near Brissago, above Lake Maggiore. Here a whole mountain was in flames, and there was no water except that of the lake below, with which to combat the fire. The local population and the military were therefore doing their utmost to keep the flames from reaching the villages, or Brissago itself. The smoke has spread for miles around. The fire, which had been burning for a whole week past on the Grammont Mountain, near St. Gingolph, close to the French frontier, is perhaps not yet put out. It has died down more than once, but always flamed up again. Other big fires were burning above Brigue, on a waterless mountain side, there was one near Thusis, and one on the Chalavornaire Alp, which was not extinguished at the end of three weeks. There was a narrow escape of a very serious fire near Interlaken below St. Beatenberg. Some thoughtless tourists, it is said, threw a cigar end or a lighted match away, without stamping out the spark of flame, which in the present exceedingly dry state of the woods is quite enough to cause a blaze in a few minutes. The prevalence of these reckless habits shows the necessity, so often insisted upon in these pages, of definite dogmatic teaching on such an important subject forming part of the duty of every school teacher. A wind was also blowing. In great haste firemen were summoned across the lake from Spiez and from other places, and by dint of digging trenches and making earth walls they checked the fire, though not until it had been burning five hours and had destroyed a considerable patch of wood. It has been scarcely possible to keep count of the number of farmhouses, chalets, barns and granaries which have been destroyed by fire in the last six weeks, nor of the quantity of hay and fodder for winter, and even the number of head of cattle which have perished in the flames before anyone could come to their rescue.

Effective Sprinklers.

At three o'clock on a recent afternoon, a fire-bell outside the premises of Messrs. Hazel, Watson, and Viney, Ltd., printers and publishers, Long Acre, W.C., rang loudly and continuously. No smoke or flames could be seen from the street, but on the arrival of the fire brigade it was found that a fire had broken out in a room on the third floor. The sprinklers had acted so well, not merely in giving the alarm, but in extinguishing the fire, that the firemen found but little to do. A similar demonstration we happened to witness the other morning in one of the large warehouses in Cannon Street, in which case, however, there was no need for the brigade to turn out. The automatic alarm would be in itself invaluable, but when it is accompanied by very effective first aid, the steadily increasing popularity of the system can be easily understood.

ENQUIRIES ANSWERED.

N.B.—Enquiries on the following subjects are not desired :—

(1) Enquiries about buildings to measure in particular towns and districts.

(2) Enquiries embodying questions which have been set in examination papers.

(3) Enquiries which ask for or require the preparation of special designs as part of the answer.

Cottage Roofs.

J. R. R. (Crickhowell) sends a tracing [not reproduced] showing the proposed treatment of a roof truss, upon which he desires advice.

—The form of truss proposed is not one for which a stress diagram or exact calculation can be made, but it appears to be sufficiently stable and of suitable scantlings. HENRY ADAMS.

Books on Perspective, etc.

ENQUIRER (South Wales) writes: "Please answer the following questions: (1) What book on perspective drawing would you recommend? Is Middleton's book on the subject, published at 2s. 6d., as desirable as a more expensive treatise? (2) In Middleton's "Modern Buildings," do the chapters on Stresses and Strains cover as much work as the separate book by the same author? (3) Can you recommend any moderately cheap book on architectural sketching?"

—(1) We can recommend Middleton's "Perspective" as the most comprehensive work for a beginner. (2) We should not recommend Middleton's "Modern Building" (£3 3s.) for the article on Stresses and Thrusts, as the separate book is much more complete. It cannot, however, at present be supplied, but a new edition is in preparation, and will be ready within a few weeks. (3) There is no cheap text book on architectural sketching, but Maginnis's "Pen Drawing," to be obtained through Mr. Batsford, may be useful.

The Highest Point in England.

J. F. S. (Birmingham) writes: "While levelling in this district recently, a friend informed me that the highest point in England was at Handsworth. Is this correct?"

—In reply to this enquiry the Director General of the Ordnance Survey Office writes: "Handsworth is by no means the highest point in England. The highest point, as recorded by this Department, is Scawfell Pike, which is 3,210 ft. above the mean level of the sea."

Qualifying for Inspector of Nuisances.

R. S. H. (Bath) writes: "For some time past I have been engaged by a surveyor and engineer, but have not been articled, and should be obliged if you would inform me what course would be best to take under the circumstances, and whether I could become an inspector of nuisances."

—In order to qualify as a sanitary inspector or an inspector of nuisances, it is practically necessary to pass examinations such as those conducted by the Royal Sanitary Institute, 90, Buckingham Palace Road, where application should be made for particulars. Such appointments, however, are largely sought after, and are not easily obtainable without influence.

Extending Sewers.

A READER writes: "Please answer the following questions: (1) A client of mine desires to connect up his property with the public sewer, which is about 170 ft. from the extreme end of his plot. The site is in the rural district, and I should like to know whether my client can claim (under the Public Health Act, or any other Act) a right to connect his drainage with the public sewer, or compel the Rural District authorities to bring the sewer to his boundary." (2) In the event of my bringing certain land into the Urban District area would the authorities have to lay a sewer to the end of the property in the main road, and also in the lane on their side?"

—I am not aware of any statutory obligation upon either an Urban or a Rural District Council to extend the sewers of their district, but, of course, this is one of the primary reasons for their existence; and in practice I have always found them willing to extend their sewers if the conditions are reasonable.

In reply to the questions, I am of opinion:—

(1) No claim can be made for the extension of the existing sewer. Section 21 of the Public Health Act 1875 gives an owner or occupier the right to connect his drains to the public sewer, on complying with the local regulations as to the method of doing so. Section 23 of the same Act enables the Local Sanitary Authority to compel connection within 100 ft. of the site if the house is "without a drain sufficient for effectual drainage."

(2) The Urban District Council will be under no legal obligation to extend their sewer to serve the enlarged district. Cannot you get an undertaking to that effect from them in consideration of not opposing the scheme at the Local Government Board's enquiry? F. S. I.

Non-Injurious Wood Preservative.

F. and F. (Haslemere) writes: "Can you inform us of any good wood preservative against dampness and rot in wood posts, trellis, etc., out of doors? We wish for a preservative that will not in any way injure climbing plants."

—We are aware of no effective wood preservative which is not at the same time prejudicial to vegetation; this is not unnatural, since many of the forms of decay which attack timber are of a vegetable nature. Perhaps readers who know of such a preparation will correspond. G.

Garden Cities.

REMO writes: "(1) How many cottages have been or are proposed to be erected per acre in the Letchworth, Bournville, and Hull Garden Cities?

(2) What is the average cost per cottage?"

—At Letchworth Garden City a tota population of 30,000 is aimed at, and in no case have more than 12 cottages been erected on an acre of land. This, being true garden city, does not contain cottage only, but houses of considerable size, a well as other buildings of an urban nature In the cottage areas the average cost pe dwelling would appear to be about £200 the accommodation varying from livin room, scullery, and three bedrooms a 4s. 9d. per week, to entrance hall, livin room, parlour, bath and four bedroom at 8s. 6d. or 9s. per week.

At Bournville Garden Village the prin ciple of division is to allow 600 sq. yds garden space to each cottage. This work out at about eight to the acre, and in n case have more than twelve to the acr been built. Of an area of 458 acres, 10 acres developed contains 593 houses. Th cost of the cottages varies from about £1 to £600 or £700, the majority being neare the lesser figure.

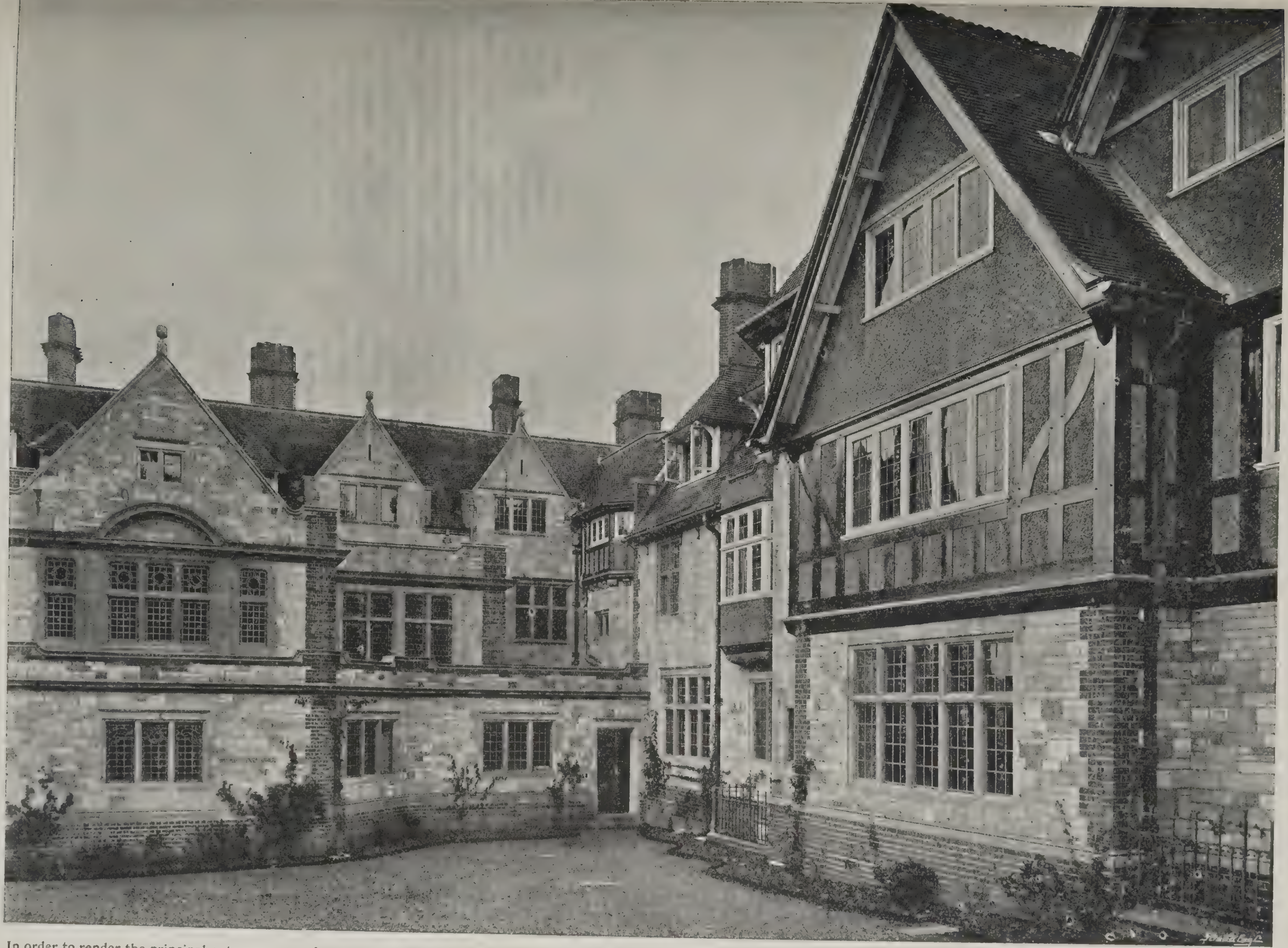
Hull Garden Village has an area of 1 acres. When completed, it is anticipate that about 540 to 550 cottages will hav been built. The land area allotted to eac varies, some having 500 sq. yds. an others 275 sq. yds., but up to now n more than nine houses to the acre hav been built. No cottage has fewer tha three bedrooms, and all have baths. G.

Sound Travelling in House.

A. B. writes: "A house erected abo three years ago has since given cause f complaint by sound travelling from o part to another, conversation on th ground floor being audible on the fir and second floors. The house is bri built, with a tiled roof; ground floor wa 16 in. hollow; first floor, 14 in. solid, fac with rough cast. Ordinary joist floorin is used throughout, except in the ha which has hard block floor. The plaste ing throughout is ordinary lime and ha Can you suggest a remedy?"

—We suspect the cause of the troub is hollow partitions, though sound wou easily reach the first floor through t ceilings. One can effectually soun deaden a building if expense is no obje and perhaps the most effective method to insert a sheeting of Cabot's sheathi quilt (supplied by Arthur L. Gibson a Co.), in all hollow partitions and betwe the lath and plaster ceilings and jois Double hollow terra-cotta or brick a concrete block partitions are also ve

(Continued on page 228.)



In order to render the principal entrance easy of access from all parts of the house, an internal court was arranged, with a corridor on one side giving direct communication between the pantry, servants' offices, and the front door, and affording easy and convenient access for outdoor servants to the owner's room, without going through either the private part of the house or servants' offices. The facing is of Guiting stone, with red bricks at the angles.

HOLLINGTON HOUSE, NEWBURY: A CORNER OF THE ENTRANCE COURT. ARTHUR C. BLOMFIELD, M.A., F.R.I.B.A., ARCHITECT.

effective, but they decrease the area of rooms, and are rather costly. Double plaster partitions and ceilings often convey a certain amount of sound by reason of connecting metal firrings. If suspended metal lathing is used for ceilings, with wood joists, it would be as well to screw on to pieces of felt at the connection of all metal hangers with joists. Hair felt and slag wool are all good sound absorbents, but Cabot's quilt, being made from eel-grass (a sea weed) is non-flammable and vermin proof, and tests have established its great efficiency as a sound-deadener.

Remuneration for Services.

Pushed Out writes: "I recently acted on behalf of a client in the purchase of a plot of land on which it was proposed to build a house. I had several interviews with the vendors, making various paper tracings, etc., and finally writing to make an offer for the land, which was accepted. I then proceeded with rough draft plans for the house; these were approved subject to another relation's sanction. My client, however, had an architect friend who gave him sketch plans of an altogether different type of house—very different from my client's own original ideas—and in the letter which accompanied the plans expressed a wish to see the plans after they had been redrawn by the architect who had the work in hand (myself). I, however, did not altogether like the plan, and suggested a number of alterations and prepared several small scale sets of plans on the lines of the house suggested by my client's friend. My client now writes to say that on the advice of his friend he has decided to take the work to a man who has built a lot of this particular type of house, and apparently thinks this ends the matter. I sent in an account for 2½ per cent. on capital value of the land purchased, and suggested a nominal (unremunerative) fee for the other work; my client agrees to the latter, but refuses to pay me for negotiating purchase of land. What rights have I, and what do you consider reasonable in the circumstances? The house was to cost about £1,000, and the land cost about £450."

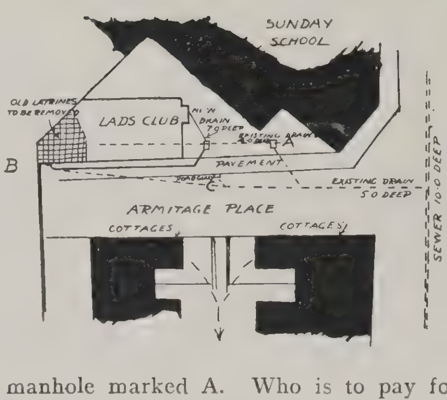
—The whole matter turns upon the question of your authority to transact the business of the purchase; if your client distinctly instructed you to conduct the negotiations, and to purchase the land for him, you are clearly entitled to be paid for your services.

In the schedule of professional charges sanctioned by the R.I.B.A. you will find clause 7 reads: "The above charges do not cover professional services in connection with negotiations for site, in surveying it, and taking levels . . . but all such services are charged for in addition." I conclude, of course, that you had no interest in the land either as owner or agent for its sale.

F.S.I.

Alteration to Drain.

H. H. T. writes: "It is proposed to build a lads' club in the playground of an old elementary school which is now used entirely as a Sunday school. The existing drain, shown on plan in black dotted line, runs from the latrines in the angle of the playground to the drain in the street. The existing latrines will be removed and the new building will have the lower floor 6.6 below the street. The existing drain in the playground is not sufficiently deep to take our w.c.'s, etc., so we shall, of course, have to put a new drain in as far as the manhole marked A. Who is to pay for the alteration of the drain in Armitage Place, which is a cul-de-sac, but has been taken over by the U.D.C.? There will be lavatories and bath in the new building, at the top end of the street marked B on plan; these will be level with the pavement, but they will require a new drain as far as C, because there is no sewer past this point. Ought the Council to bring up a new branch from the deep sewer in the main street as far as B, or must we bear the whole cost of the drain until it joins the main sewer?"



—Section 23 of the Public Health Act, 1875, gives the local sanitary authority powers to enforce connections with their sewers, if the distance does not exceed a hundred feet; but I know of no statutory power which will allow an owner to ask for the reconstruction of a public sewer which is not deep enough for his purpose.

I am therefore of opinion (a) that the consent of the sanitary authority to the alteration of their sewer must be obtained, and (b) that the cost of both the alteration and of the new drain will fall entirely upon the builders of the new club room.

F.S.I.

TRANSITIONAL NORMAN ARCHITECTURE.

An interesting discussion on this subject has taken place in the "Yorkshire Weekly Post."

Mr. F. W. Matthewman, of Wolverhampton, writes:—

Architectural theorists must perforce choose between evolution and revolution, and, of course, there is a vast difference between the change from Romanesque to pointed, and any subsequent developments of the so-called Gothic. An unbiassed observer, after viewing Salisbury Cathedral for the first time, would undoubtedly favour the revolutionary theory, as I believe there is not a trace of Romanesque in the whole of that magnificent pile. The idea that the exigencies of vaulting caused the transition from Norman to Early English bear very little room for romance or sentiment. Although, as shown by Parker, this may account for the use of the pointed arch in late Norman work, it is still far from fully explaining the Gothic style. In adopting an independent view of the matter there is nothing to prevent one assuming that the first to use the pointed arch in English architecture drew his inspiration from ancient and alien sources, it having been previously employed by Egyptian, Persian, and Etruscan builders. I have not seen it suggested seriously that the term "Gothic" arose from the historical fact that the style was introduced by Goths. The name is rather sentimental than historic, and was no doubt originally given as a term of opprobrium by the classic extremists of the late sixteenth and fo lowing centuries. In the middle of th eighteenth century Sanderson Miller, most important influence for some for years on the architecture of England, personal friend of the elder Pitt, and wh carried out a premature "Gothic Revival on his own initiative, was looked upon b the traditional school as an absolute cur osity. The acrimony against everythin "Gothick" was an outstanding feature the period.

Mr. E. Leonard, of Rotherham, fin that the following list of abbeys which ar Cistercian contain the number of bays given:—Kirkstall 8, Furness 9, Rievaul 9, Tintern 6, Melrose 8, and Roche 8. Th conflicts with the statement of anoth correspondent that in all Cistercia churches the nave is of eleven bays.

Mr. Harold E. Henderson, of Yor writes: Passing by the idea that th pointed arch was derived from the inte interlacing of semi-circular arches (vi Bolton Abbey Choir) in the wall arca ing of the Norman period and the ca shadows projected on the walls by the su behind the semi-arch we come to the mo feasible suggestion of the vaulting of th oblong bay.

The pointed arch no doubt originate in the East, as we find it used in t Mosque of Omar at Jerusalem in th ninth century. The western builder use it in the first instance as a structural e pedient, and adopted it first solely f structural reasons. In the early Roma esque churches in the north of Italy ar southern France the nave of the chur was often spanned with a barrel vault stone, and owing to the extensive later counterparts required to counteract th thrust of the semi-circular vault, they h on the expedient of building their vaul pointed. This obtained a much great downward thrust, and enabled them to away with about half the abutment r quired for a semi-circular arch. This ty of wagon-vault may be seen in the tra septal chapels of Kirkstall Abbey. In t first instance the vaults were construct without ribs, but as it developed, tran verse pointed ribs made their appearanc

The groined quadripartite vault is al to be seen (square bay) at this period, a later the same vault with moulded rib transverse and diagonal. It was in t square bay, I think, where the point arch first made its appearance in ribb vaulting. Owing to the four sides bei equal, and the semi-circular arches equal span and height, the diagonal r was either considerably higher, if of sem circular shape, or it had to be built wi a depressed elliptical curve. To obvia this the transverse ribs or arches we built pointed to enable the diagonal ri to be semi-circular. Having this bef them, it was not a very great step to t introduction of the oblong bay, with arch of different spans, but of the same heig the diagonals remaining semi-circular.

The Cistercian builders, who probab more than any others, were responsible the development of what is known Gothic architecture, followed this idea nearly all of their English monasteri not from an æsthetic standpoint, but sol as a structural development, and Bui was, Fountains, Kirkstall, etc., are amples where it may be advantageou studied. Side by side with the point arch they still used the round arch windows, doors, arcading, etc. Thus see the pointed arch started from a c structural basis and developed as necessary feature of æsthetic expression

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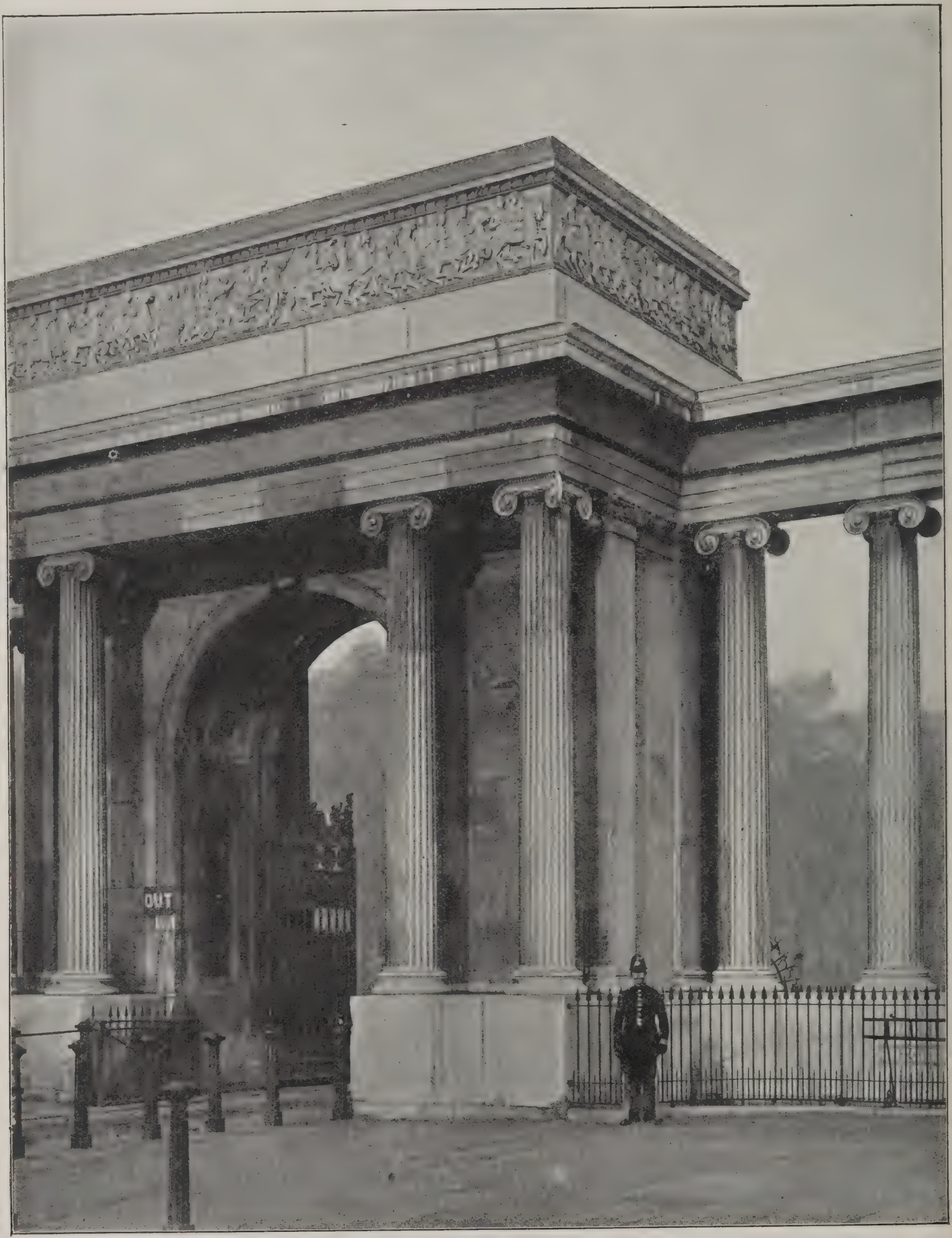

The arches and colonnades are in Portland stone, and the cast-iron gates are good examples of their kind. The structure was erected in 1825.

SCREEN AT HYDE PARK CORNER. DETAIL OF CENTRE BAY. DECIMUS BURTON, ARCHITECT.

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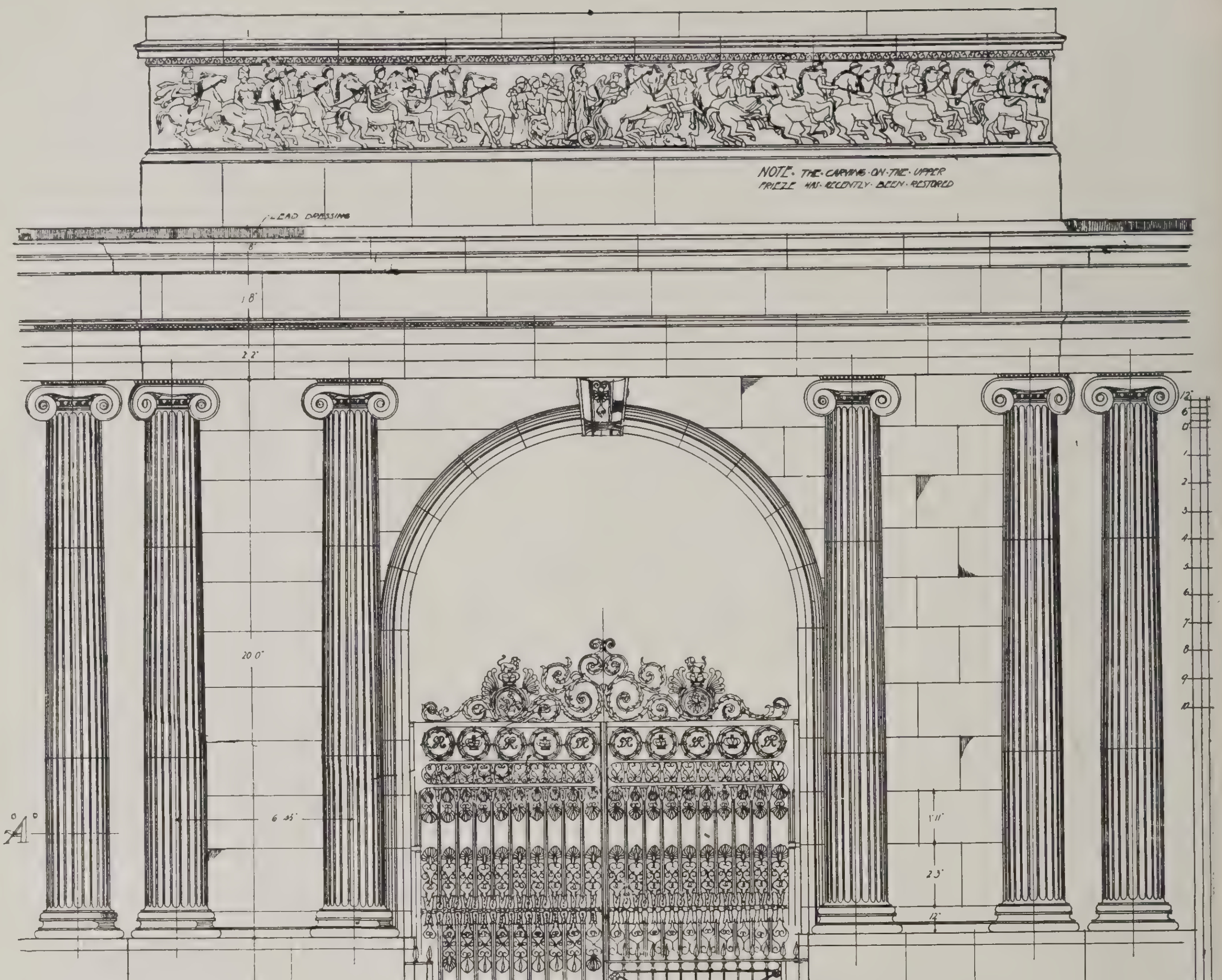
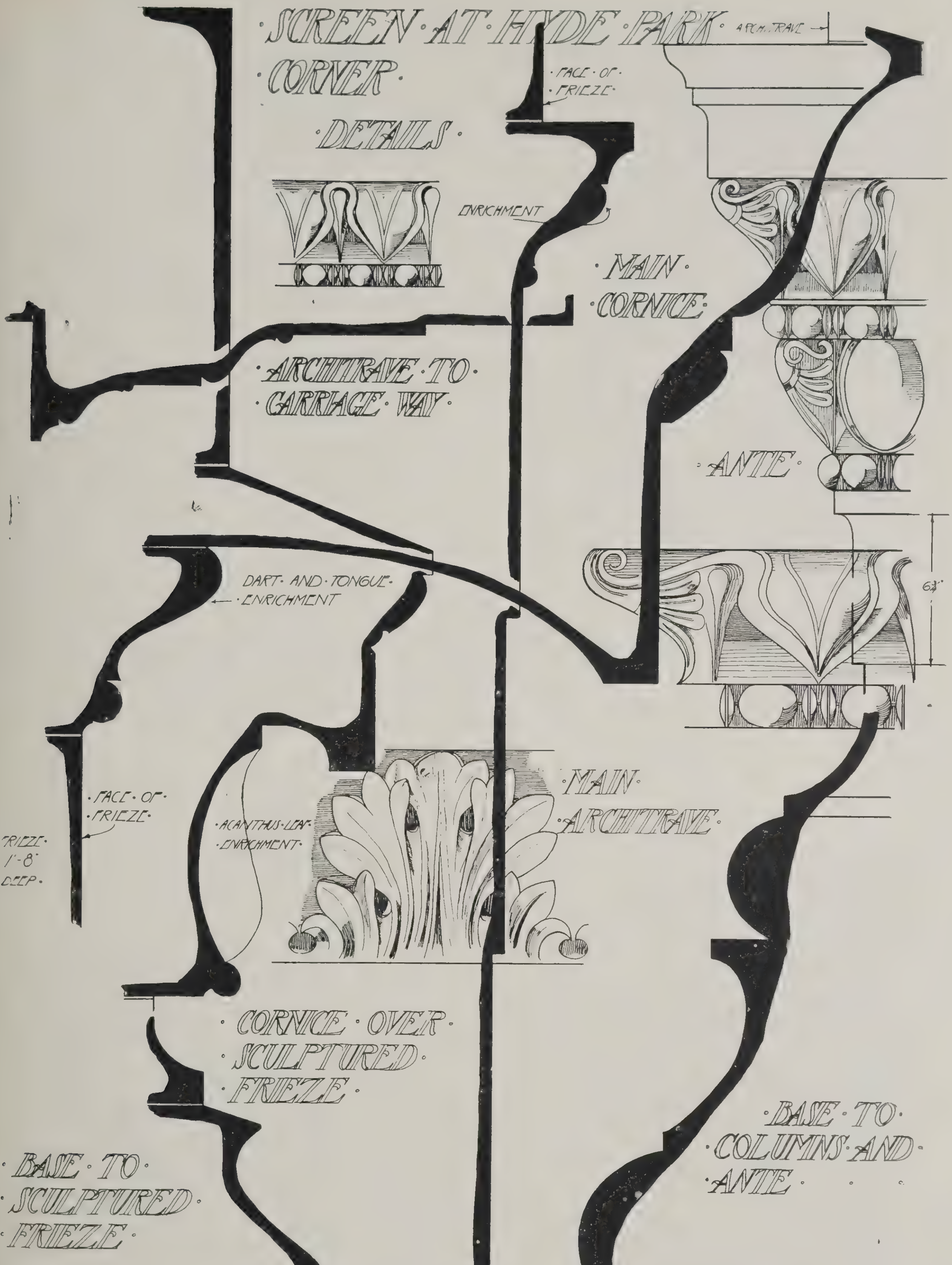


SCREEN AT HYDE PARK CORNER. DETAIL OF CENTRE BAY. MEASURED AND DRAWN BY E. A. R. RAHBULA.



·SCREEN·AT·HYDE·PARK·CORNER·

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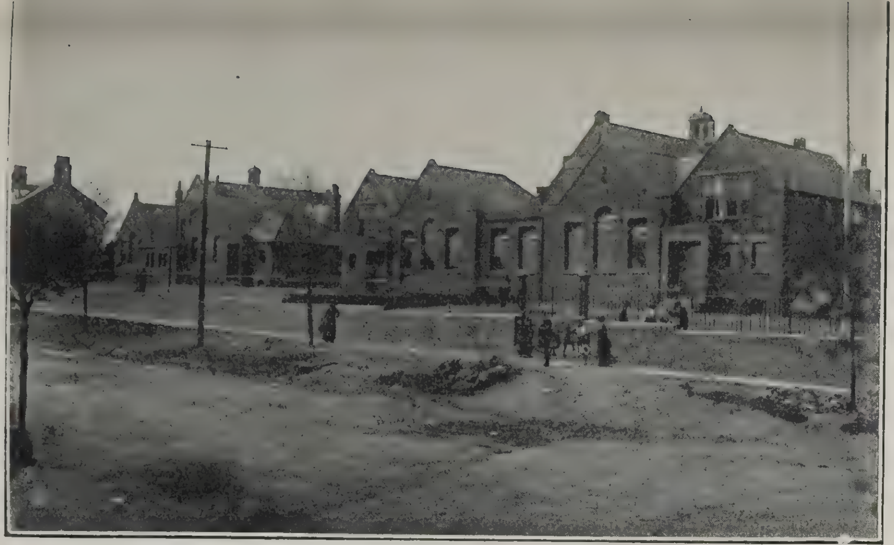
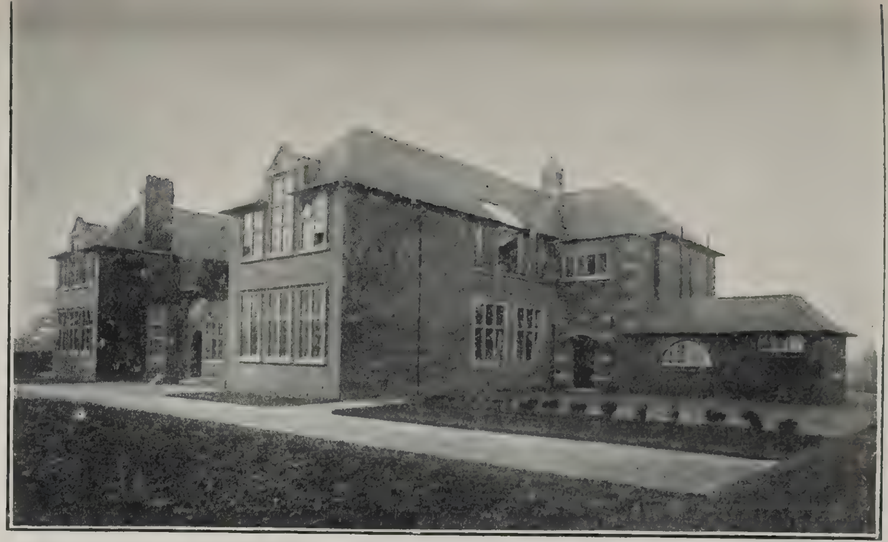
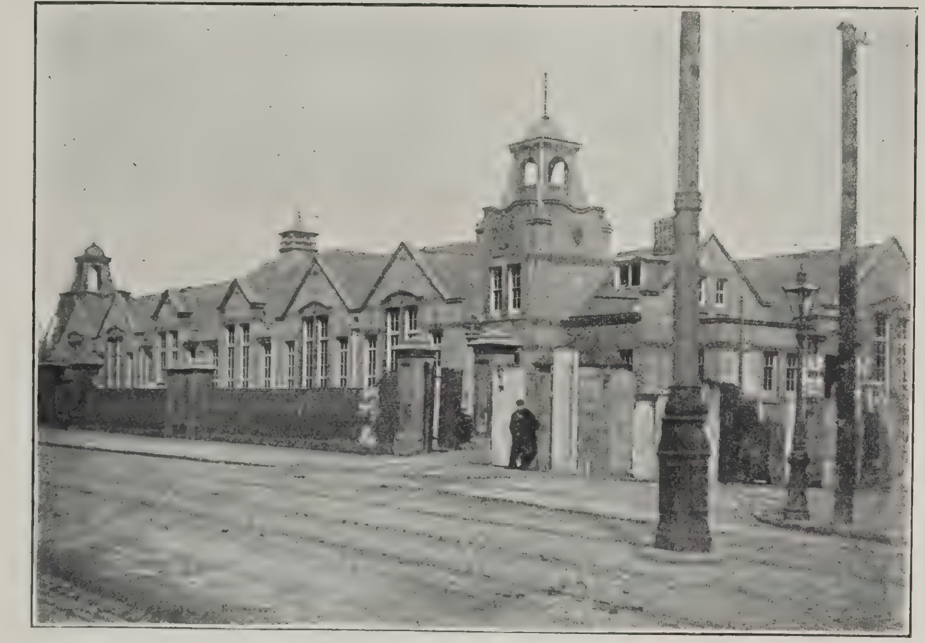


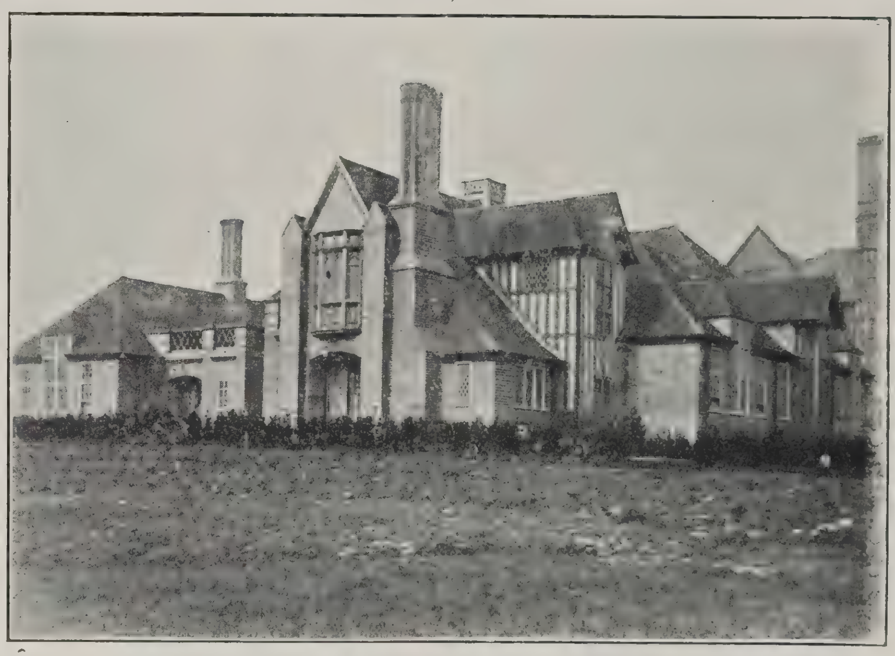
BURLINGTON COUNCIL SCHOOL. J. EARNSHAW, ARCHITECT.



GIRLS' SECONDARY SCHOOL, GRANTHAM. H. H. DUNN, A.R.I.B.A., ARCHITECT



HILL TOP SCHOOLS, WEST BROMWICH. WOOD AND KENDRICK, ARCHITECTS.



INFANT SCHOOL, BOURNVILLE. W. ALEX. HARVEY, ARCHITECT.

In each of these schools, which are of recent erection, Expanded Metal (supplied by the Expanded Metal Company, Limited, York Mansions, York Street, Westminster) has been used in the construction of floors, walls, etc., as a precaution against fire.

SOME EXAMPLES OF MODERN SCHOOL DESIGN.

NEWS ITEMS.

London Statue of Captain Cook.

There are said to be seven statues of Captain Cook in existence, one of which is at Whitby, where he was born, and another at Owhyhee, where he was killed by savages in 1779. Now there is to be an eighth in the Mall, near the memorial to the Royal Marines who fell in the South African War. Sir Thomas Brock, R.A., the sculptor of the Queen Victoria Memorial, has accepted the commission to undertake the work, which will take the form of a bronze statue of the intrepid navigator.

Blackpool Water Supply.

A scheme is being prepared for the provision of a new reservoir and waterworks for the Blackpool and Fylde districts, at an estimated cost of about £2,000,000. It it proposed to construct the reservoir at Dalehead, near Slaidburn, in the district council's area, and on the Yorkshire side of the Clitheroe Union district. The site of the proposed reservoir is at the head of the Hodder Valley. It is probable that strong opposition will be advanced against the scheme by the inhabitants of Hodder Valley from Dalehead to Whitewell, on the ground of interference with their water supply.

Rebuilding King's Cross Railway Station.

The old Metropolitan station at King's Cross has been entirely demolished, and the foundations for the bridge which is to carry the trams from Gray's Inn Road to Caledonian Road over the Metropolitan Railway are nearly completed. In a few weeks now the bridge will begin to take shape, and in a couple of months will be completed. Traffic has never been interfered with for a single day, and a complete station has been demolished and carted away almost without the passengers being aware of it.

Margate's New Pavilion.

A new pavilion and winter gardens at Margate comprise a concert hall which will seat 2,500 people, and an amphitheatre seating 2,000. The cost is said to be about £40,000. The scheme was conceived and executed by Mr. E. A. Borg, the Borough Engineer, who, at the opening ceremony, acknowledge the valuable assistance he had received from Mr. S. C. Ramsey, A.R.I.B.A., an architectural gold medallist of King's College, London. The general contractors were Messrs. T. T. Denne, of Upper Walmer, and the internal decorative plasterwork has been carried out by Mr. Gilbert Seale. The building is in Neo-Grec style.

Artisans' Dwellings in London.

In the City of London there are five blocks of artisans' and labourers' dwellings belonging to the Corporation. They were erected in 1884 in the vicinity of Aldgate, and occupy nearly two acres. There are 42 tenements of three rooms each, 176 of two rooms, and 23 of a single room, or in all 241. In addition there are 20 shops and basements with 34 rooms at the back. The total number of habitable rooms is 535. The basements are not allowed to be used as dwelling-rooms. The rents of the tenements vary according to their size from 4s. to 11s. 6d. per week, and the shops from 10s. to 28s. All the holdings have been fully occupied during the year. The water for the dwellings, including two swimming baths opened in 1904, is obtained from an artesian well 512 ft. deep. Last year 11,687 baths were taken by the occupants.

A United Builders' Alliance.

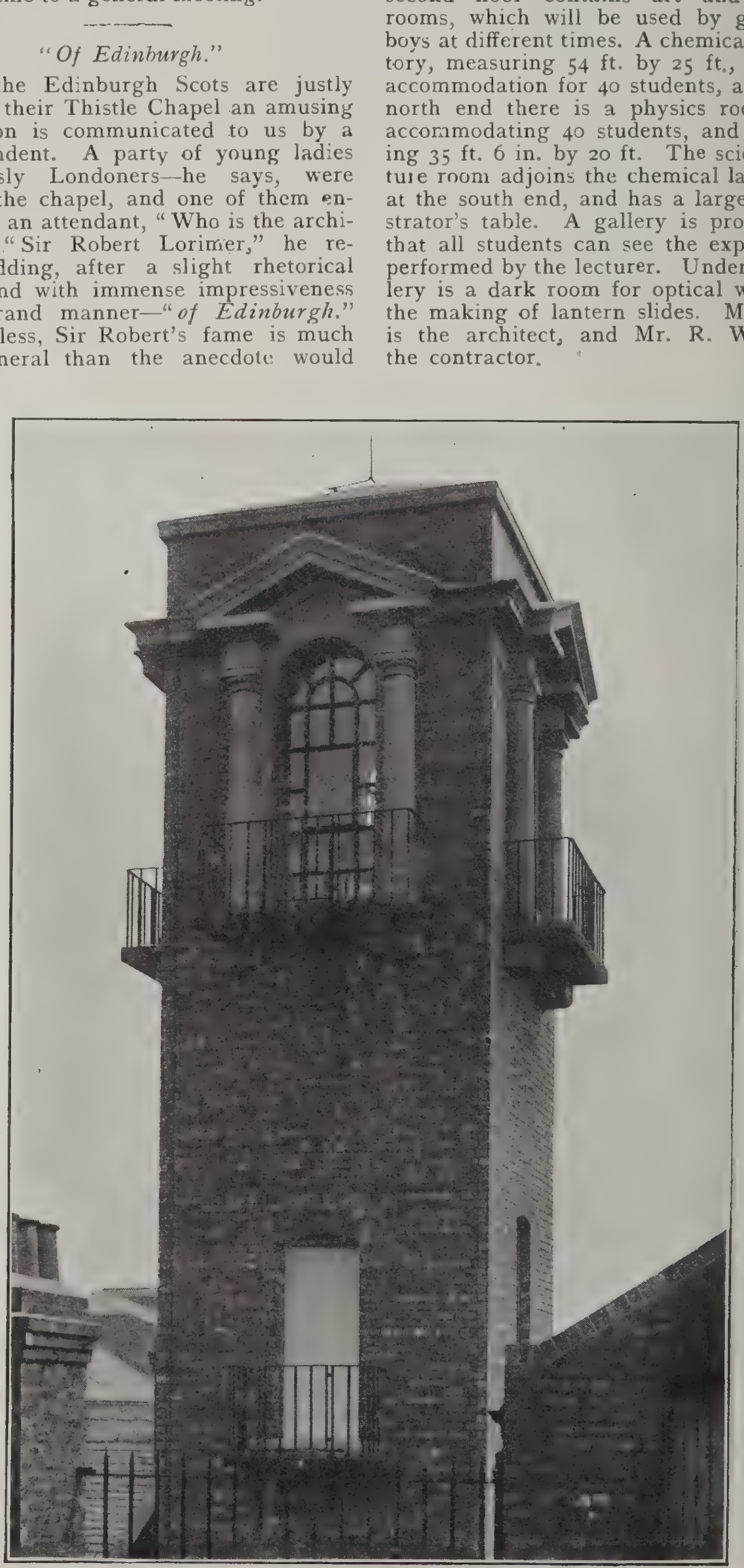
Having regard to the unsatisfactory fluctuations of property investments and further signs of depreciation (whilst prices of materials are steadily advancing), it was unanimously decided at a general meeting of builders, held at The Athenæum, Muswell Hill, N., to form an alliance, and a general committee was elected to frame a report as to administration, etc., and to submit same to a general meeting.

"Of Edinburgh."

That the Edinburgh Scots are justly proud of their Thistle Chapel an amusing illustration is communicated to us by a correspondent. A party of young ladies—obviously Londoners—he says, were visiting the chapel, and one of them enquired of an attendant, "Who is the architect?" "Sir Robert Lorimer," he replied; adding, after a slight rhetorical pause, and with immense impressiveness in the grand manner—"*of Edinburgh.*" Nevertheless, Sir Robert's fame is much more general than the anecdote would seem to suggest; and while the ignoranc of the London ladies was perhaps excusable, their enquiry on the point wa decidedly a sign of grace.

New Higher Elementary School, Newpor (Mon.).

The new higher elementary schoo which has been built and equipped at cost of £18,908, at Stow Hill, Newpor (Mon.), comprises a central hall, 53 ft. by 35 ft., with nine class-rooms, each one accommodating 40 students, grouped around. The ground floor will be used by boys, and the first floor by girls. The second floor contains art and science rooms, which will be used by girls and boys at different times. A chemical laboratory, measuring 54 ft. by 25 ft., provides accommodation for 40 students, and at its north end there is a physics room, also accommodating 40 students, and measuring 35 ft. 6 in. by 20 ft. The science lecture room adjoins the chemical laboratory at the south end, and has a large demonstrator's table. A gallery is provided so that all students can see the experiments performed by the lecturer. Under the gallery is a dark room for optical work and the making of lantern slides. Mr. Ward is the architect, and Mr. R. W. Moon the contractor.



FIRE STATION TOWER, SUNDERLAND.

W. & T. R. MILBURN, AND WELLS & ANDERSON, JOINT ARCHITECTS.

A FIREPROOF COTTON FACTORY.

ſhe problem of fireproof construction buildings designed to accommodate ge amounts of inflammable material, or neighbourhoods where fire risks are 'h, is a most important one under dern conditions. The rapid growth of nforced concrete construction has in ny cases made possible a satisfactory ution of this question. Although the :t cost of concrete is higher than that of st other types of construction, the fact .t there is practically no depreciation to considered is a strong argument in our of this type.

ı notable example of the use of this e of construction for a fireproof ware- ise is that of the new cotton storehouse the Massachusetts Cotton Mills, at vell, Mass. Not only is this building of the largest concrete structures of kind, but in its design there are several eworthy features. Furthermore, its :tion was accomplished in a remark- y short period of time.

'he building is 100 ft. by 256 ft., and ıds twelve storeys high. It is situated :he heart of the City of Lowell, on a :k the surroundings of which were such : very careful planning was necessary ›rder to assure the arrival of material xactly the proper time. The available age space being exceedingly limited, ıt care had to be exercised to make : that there would be no congestion, at the same time no delays.

he designers were Messrs. Lockwood, ene and Co., of Boston, Mass., and entire contract for the construction was :ed with the Aberthaw Construction ıpany. The interior design of the ding consists of mushroom columns reinforced concrete slab floors. This lerless design permitted of very low ey heights, the total distance between floor being only 8 ft. The columns are atticed steel encased in concrete; and exterior walls are of solid reinforced :rete for the first three storeys, and :rete panelled with brick for the upper eys. A very heavy concrete cornice rcles the top of the building; and this ure, combined with the brick panelling the grooving of the concrete surface he first three floors, gives the building :markably handsome apearance. It in fact, a part of the designing neers' plan to have this building a dsome architecturally as it is effective the uses to which it is put.

here are five rows of columns spaced t. 8 in. on centres, with twenty 16 ft. ·itudinal bays. These reinforced con- e fire walls extend the width of the ding, and divide each floor into four rate compartments. These fire walls, vell as each row of interior columns, on heavy reinforced concrete trans- e girders running the width of the ling. The girders carrying the fire s are supported on three rows of Ray- d concrete piles, and the column ers are supported on two rows of piles. building walls are likewise carried on rete piles, there being in all some piles in the foundation.

ong the rear of the building there is ncrete loading platform which serves elevators. Each of the latter is along- one of the end fire walls, so that it es two of the compartments on each , and the trestles set upon this por- did not move when filled up.

is noteworthy that the base member of restle tapers towards the rear. This was arranged, first, to enable the filling to penetrate below and help to bed the trestle, and, secondly, to allow for swinging, should there be a tendency to creep out of line in setting up.

For lifting, wooden toggles were put through the holes in the webs, and wire rope slings slipped over, so that when lowered into the water the trestle assumed a truly vertical position. It might be of interest to note that the centre of gravity in air was not quite the same as in water, the trestles not being wholly immersed at any time. The correct position of the slings was found after a few trials, and so uniform were the trestles in size and distribution of weight that the slinging position remained constant throughout.

The work of constructing the trestles was carried out without hitch of any kind, the moulding being done face downwards. The moulding forms were very stoutly framed together of oiled Oregon, fitted in panel in such a way that the whole could be taken apart when the moulding was finished.

The steel reinforcement was put together complete, and set up in place ready for enclosing in the moulding forms. The diagonals and cross ends were wrapped, not a close fit, around the vertical rods; and the whole, when framed up, formed a rigid skeleton capable of being moved about.

The concrete was composed of 1 part Portland cement to 2 parts sand and 4 parts finely broken basalt.

The first portion of the wall built has now been standing about two years and is in perfect condition.

STEPPED WINDOW, CARISBROOKE CASTLE, ISLE OF WIGHT.

(See "Sketchbook and Camera," page 220.)

FIREPROOFING CONCRETE.

In the clause concerning the use of sodium silicate for enamelling concrete, in the last report of the Committee on Treatment of Concrete Surfaces, of the National (U.S.A.) Association of Cement Users, an interesting thought is suggested regarding the possibilities of using sodium silicate to mix with concrete in columns, girders, or slabs, in order to make them impervious to any effect of excessive heat in case of fire. The passage in question is as follows: "If the concrete surface is first treated, it can then be enamelled. Take a piece of cured concrete thoroughly dry; immerse for a few hours in a solution of 1 part, 40 degrees Baumé, of sodium silicate, 3 parts water; remove from solution; allow to dry in warm place for 24 hours. Again immerse it in the same solution of sodium silicate, remove, and allow to dry in a warm place for 24 hours. It will be found that the concrete so treated will stand without dehydration of the cement a very much higher heat than untreated concrete."

Why would it not be feasible to mix a small percentage of sodium silicate with concrete to be used for structural purposes, so that, in the case of fire, instead of dehydration, the concrete would become enamelled?

CO-OPERATIVE DOMESTIC HOT WATER SUPPLY.

It has been proved in a large number of installations which have been erected in asylums, hospitals, and the like, that hot water can be distributed over large areas and scattered groups of buildings with as little as 10deg. F. loss. Of course gravity cannot be utilized to distribute the supply over an extensive block of houses, but the pressure required can easily be obtained by means of a small pump, which circulates the water with a moderate speed through the flow and return pipes. This pump would best be driven electrically, and as the load would be constant over the 24 hours, current should be obtainable at a low price. The replacement of the water drawn would be entirely automatic. The boiler could be so arranged that in spite of the uninterrupted supply of hot water attendance would not be required more than, say, three or four hours a day, and most probably the same stoker could easily handle three or four adjoining systems. Smoke could be avoided almost entirely.

There is no reason, contends Mr. R. Herzfeld, in the "Times" Engineering Supplement, why such a system should not be made a commercial success. A block of, say, 25 houses could be easily supplied from a small station hidden away in a corner of a garden or in some other suitable place, and managed either by an enterprising contractor or by a committee of

The cathedral was built in the fourteenth and enlarged in the fifteenth century. *(See "Sketchbook and Camera," page 220.)*

DOORWAY, CATHEDRAL OF ST. GILES, EDINBURGH.

the houseowners. In order to protect all the interests concerned, the hot water should be supplied to the householders through meters. All possible emergencies could be met by the installation of the most important parts in duplicate. Once the great advantages of such a scheme had made themselves felt—the reduction in the coal bill, the relief to the servants, the absence of boiler repairs, the greater cleanliness, etc.—the adjoining neighbours would be only too anxious to share its benefits and to pay, say, 6d. for every 100 gallons used. Such a charge would in ordinary circumstances leave a fair profit after allowing for interest and depreciation.

A scheme of this kind should especially appeal to gas and electric lighting companies, who labour under the difficulty of ousting the coal-fired kitchen range so long as the generation of hot water is not made a business quite separate from cooking. The separation of these two processes would greatly facilitate the introduction of the gas or electric stove for cooking proper, and the provision of a small heating stove for use in the winter evenings would effectively meet one objection which might be put forward—that the kitchen range is really necessary for heating as much as for the preparation of the meals. The adoption of such a system of central hot water supply, which, of course, is not uncommon in blocks of flats, is being considered for a range of buildings now under construction in London.

BUILDING INTERESTS IN SOUTH AFRICA.

(From Our Special Correspondent.)

Johannesburg, August 1st, 1911.

In the Capital.

Trade in general throughout the country shows considerable buoyancy, and building continues to have its fair share of activity. At Pretoria a new scheme for beautifying Church Square has been commenced, and Pretorians during the next few months will see, growing up under their eyes day by day, a work which will add very greatly to the beauty of the town. A sum of £35,000 has recently been voted for the carrying on of this work, £5,000 of which is a gift from the Union Government. The architect is Mr. V. S. Rees Poele, and the contractor for the main portion of the work Mr. G. van Reenan Mostert, whose tender for £21,750 was recently accepted for the granite walls and decorative work of the new scheme. In dealing with the artistic portions of the scheme, it is probable that some well-known sculptor will be invited shortly to undertake some important work at the capital; and it is suggested that this would be the time for the municipality to seize the opportunity for completing the architect's ideas by having his advice and guidance upon the question of decorative groups crowning the pedestals. This also refers to the feature placed in the central pond, which has been designed to contain bronze panels with small figures on each side, and surmounted by a figure representing "Union." The scheme when complete will greatly enhance the beauty of the town, and will give to the Square an effect similar to that of the gardens of Versailles. The municipal council and those in authority are to be congratulated on making an advance in the treatment of public open spaces which will be unique in South Africa, and of lasting effect.

Johannesburg Activity.

In Johannesburg the building activity which has been noticeable since the latter half of 1909 shows little signs of slackening off. Several big works are approaching completion; but numerous large buildings are still on order in the city.

Among the more important schemes in progress or shortly to be undertaken may be noted the proposal by the railway authorities to complete the quadrangle and thus entirely fill up the site occupied by the administrative block. The Niagara skating rink, in the near vicinity of this massive pile of buildings, is expected to be finished in about three months. This is a £17,000 job, independent of plant to be fitted into the new structure. In Von Brandis Square, the contractor is now putting the finishing touches to the Law Courts, a magnificent block which has been erected at an outlay of £140,000. What is to be one of the best-equipped buildings in Johannesburg is the new building for Messrs. Norman, Anstey and Co. The bricklaying work on this undertaking has been something in the nature of a record for speed. The cost of these extensive stores is estimated to be about £100,000. Messrs. Randles, Bro. and Hudson, the well-known wholesale house, are to have a new building erected at the corner of Von Brandis and Market Streets, to entail an outlay of over £12,000. Messrs. Mosenthal Bros., Ltd., it is reported, propose to put up a £40,000 block at the corner of Market and Kruis streets. The new wing to the Telephone Exchange (now nearing completion) is costing £14,000. Extensions to be put in hand almost immediately will enlarge the Grand National Hotel buildings so as entirely to cover six stands. It is proposed by Messrs. Chudleigh Bros. to erect an entirely new building abutting on Market, Eloff, and Pritchard streets. The estimated cost is put at £100,000. Among other building schemes may be mentioned the proposed new music-hall to occupy the corner of Eloff and De Villiers streets. The Standard Theatre, it is understood, is to be improved and altered at an outlay of £10,000. The new market buildings at Newtown, now well under way, represent an expenditure of about £30,000.

New Y.M.C.A. Building.

Where Joubert and Bree Streets meet, and upon a splendid site at the north-west corner of the junction, the new modern building of the Johannesburg Young Men's Christian Association will immediately be erected. Its frontage to Bree Street will be 155ft., and to Joubert Street 105ft. The main building will be one of three storeys and cover the whole area of the site, thus providing a large amount of accommodation.

A Distributing Centre.

Johannesburg, I think I pointed out in a previous article, is gradually, but surely, taking its place as the chief distributing centre for the whole of South Africa. Two local wholesale houses—Messrs. Mosenthal Bros., Ltd., and Messrs. Randles, Bro., and Hudson—have, we are informed, found it an advantage to centralise their distributing business on the Rand. With a network of railways radiating in every direction, Johannesburg is now best situated for distribution to country branches. In the past few years many large South African firms have been taking advantage of this.

In Natal.

In Ladysmith a great improvement has taken place in the construction of a new post office. In Maritzburg the new U versity College is making great strides wards completion. In Durban also th is a good deal of work going on; inde in the chief centres of Natal the contr tors have no reason to complain.

In Cape Town.

I find also from reports to hand t building at Cape Town continues bri and the following are amongst the wo in progress:—New Supreme Courts, U versity Building, Mission Hall, Obser tory, Hiddingh Hall (South Afri College), and quite a number of priv residences. Stonedressers are kept bu the work in connection with the new L Courts and the University Building s affording employment to upwards of men. There is scarcely any dema however, for bricklayers, the buildi now in course of erection having p ceeded beyond the stage at which ma bricklayers are required.

The Great Problem

South Africa's great problem, that coloured skilled labour, still has to faced, and it is of interest to note t General Smuts, the Minister for the terior, speaking recently at Greyto Natal, said in reference to Black ver White that the "Dutch and English l endeavoured to set up two systems, both races were to blame for this, but all that concerned the destiny of So Africa was to have one white race wo ing and living together. General Bot who was a Boer of the Boers, had pro himself worthy of the confidence of British people."

Journalistic.

I may mention in these miscellane notes that the "S.A. Master Build Federation Journal" this month en upon the eighth year of its existence. is the official organ of the National F eration of Master Builder Emplo in South Africa, and is a most pop journal, run in the interests of the bu ing trade. Mr. Jas. T. Brown, the ed and proprietor, has recently sta another journal called "The Afri Architect," which is meeting with si lar success.

CARDIFF AND DISTRICT BUILDER ASSOCIATION.

The monthly committee meeting of this ass tion was held at 22, Castle Arcade Chambers, diff, on August 4th, Mr. C. Hoare (vice-presi in the chair.

Apportionment of Private Improvement Cha —Mr. Hoare reported the present position of matter.

Llandaff and Dinas Powis Rural District Co —New By-Laws: The secretary read corres ence with Mr. M. Warren, the Clerk to the Co which was approved.

Cavity Walls.—Mr. Hoare reported the inte with the Public Works Committee on August and stated that he and the other members o deputation had asked to be allowed the opti building any external walls of two-storey h with 11in. cavity walls, and that after some tions had been asked and answered, the chai stated that the matter would receive the ca consideration of the Committee, and that the Engineer would be asked to report. Mr. thought the interview would lead to a satisfa result.

Depositing of Building Agreements.—The tary read correspondence with Baron Merth Senghenydd, which was approved.

Cardiff, South Wales, and Monmouthshire tects' Society.—The secretary read letter from G. A. Birkenhead calling attention to the ten of the City Authorities to place upon their pr staff the designing of public buildings (work viously given out to architects), and request know whether our association would be willi support them in any action they might deem p to take to prevent this. It was resolved tha subject be placed on the agenda for the meeting, and that in the meantime the sec write to Mr. Birkenhead for some further inf tion to enable us to come to a decision. Watkins, Secretary.

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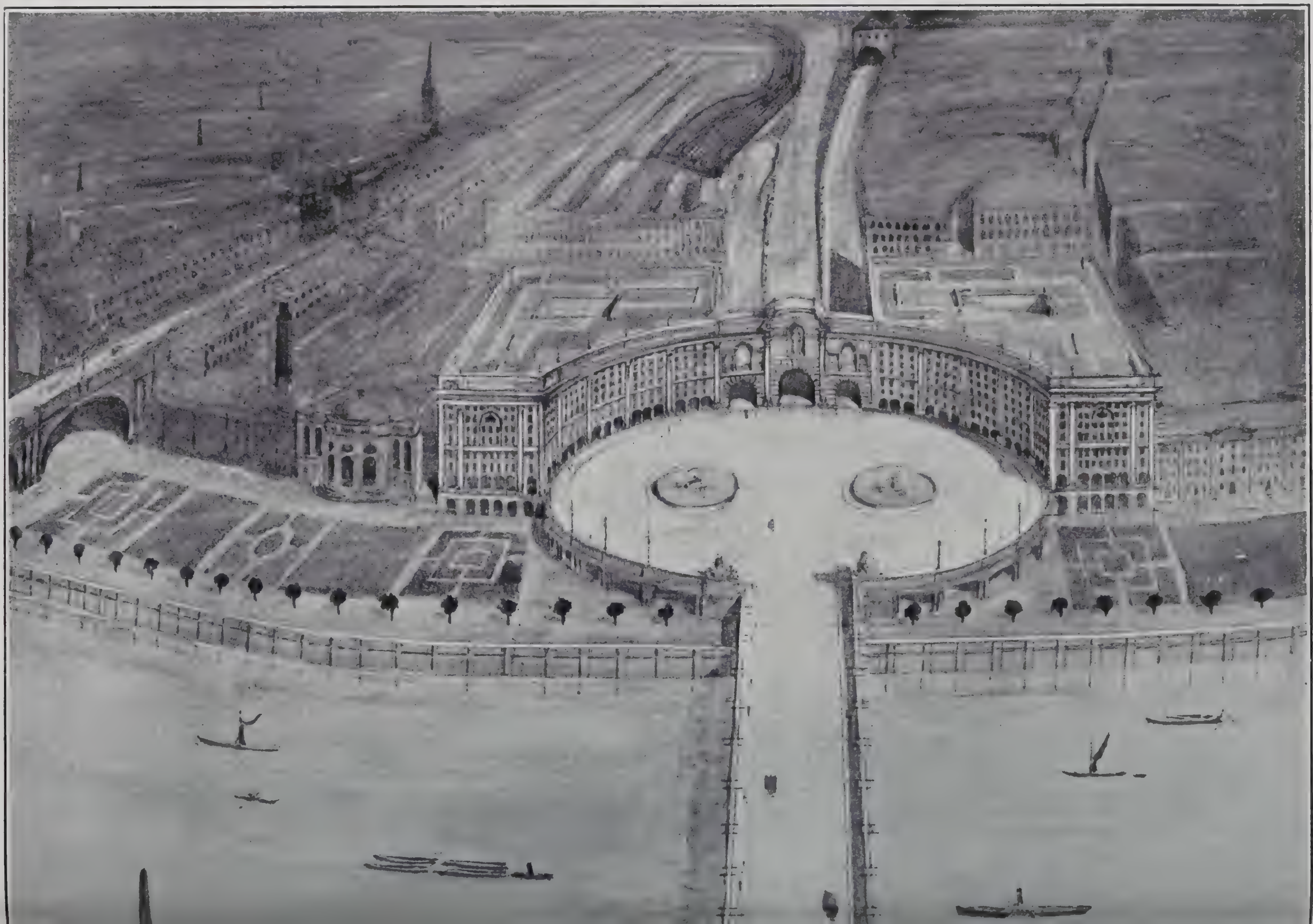

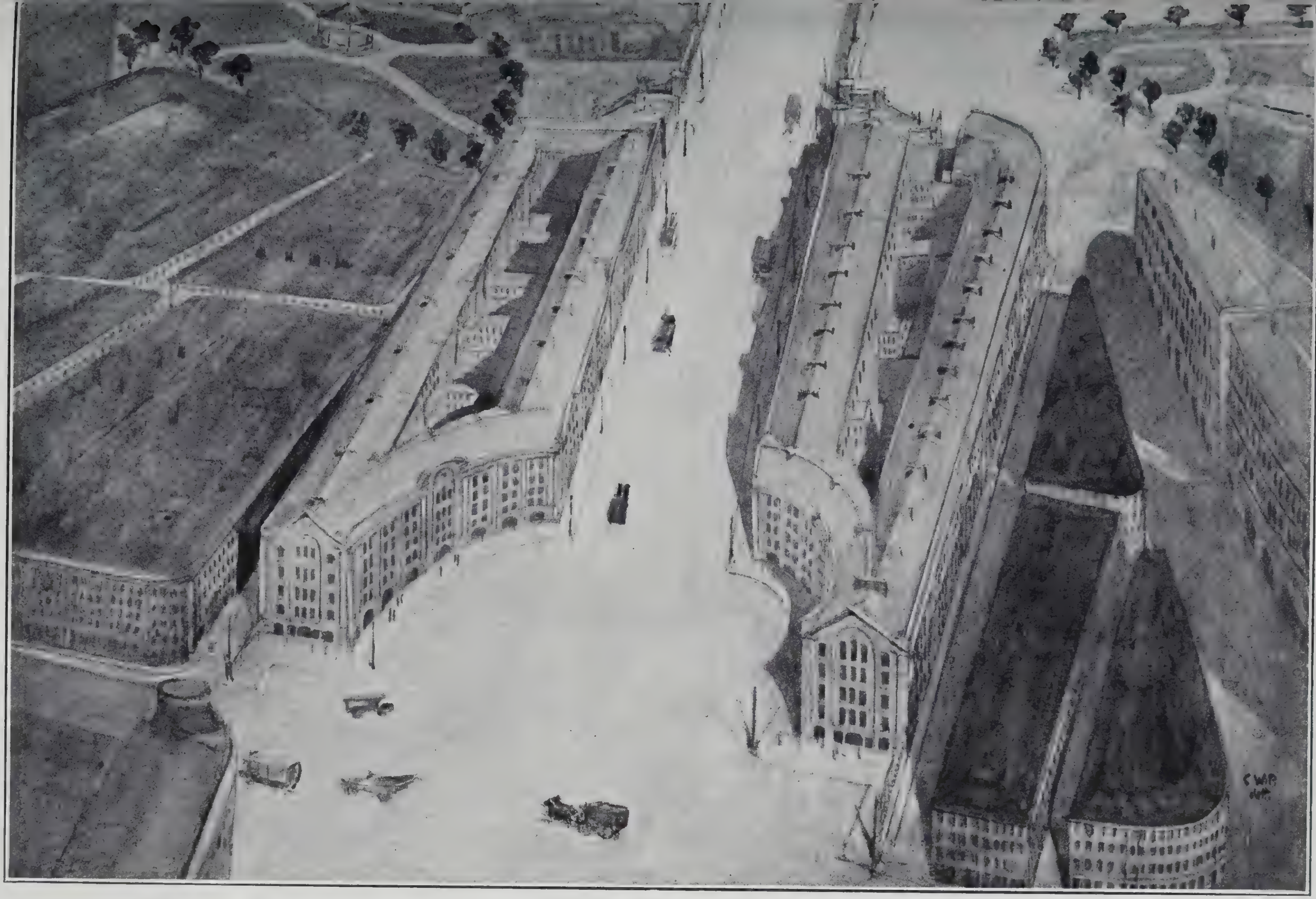

SUGGESTED SCHEME FOR NEW BRIDGE ACROSS THE THAMES AT CHARING CROSS AND TRANSFER OF S.E. AND C.R. STATION TO SOUTH SIDE OF RIVER. W. L. LUCAS, ARCHITECT.

(Royal Academy Exhibition, 1911.)

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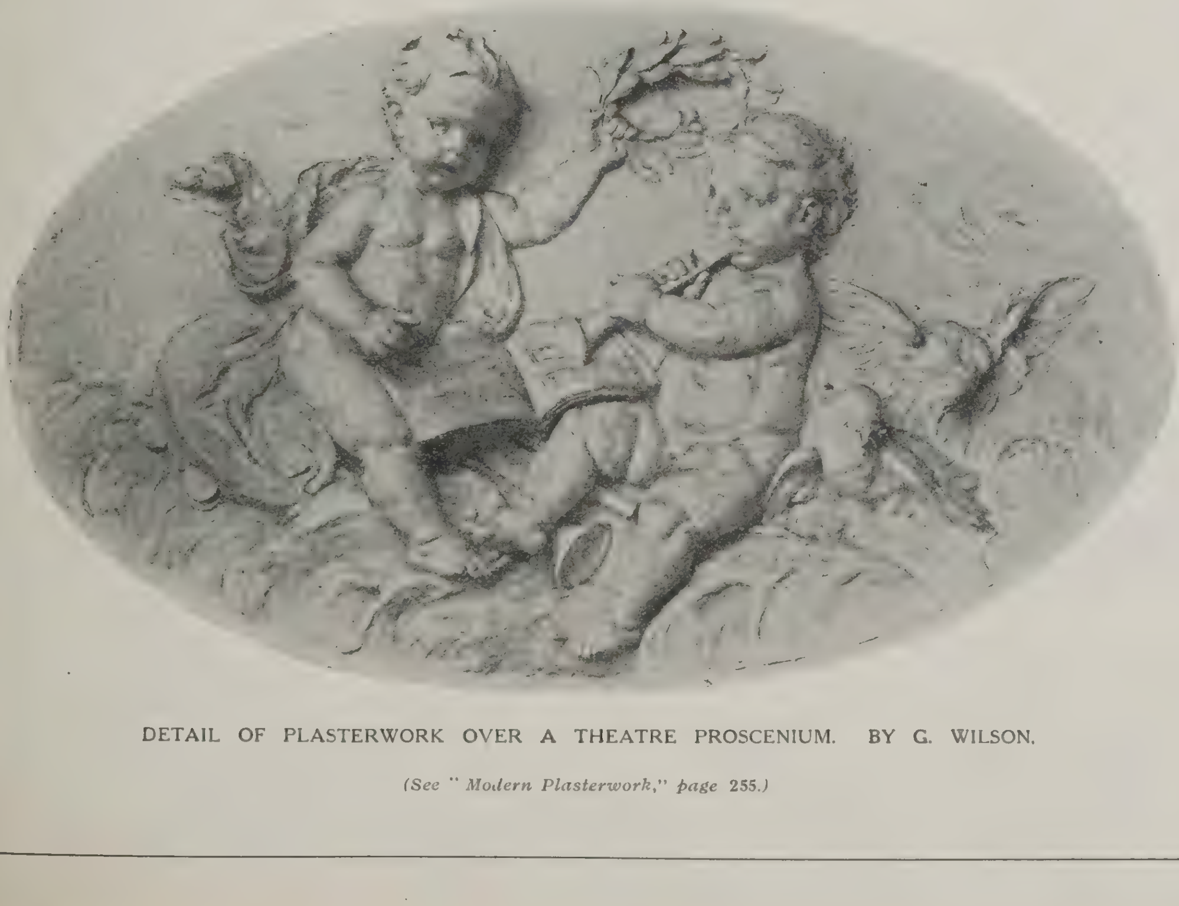
THE ARCHITECTS' & BUILDERS' JOURNAL.

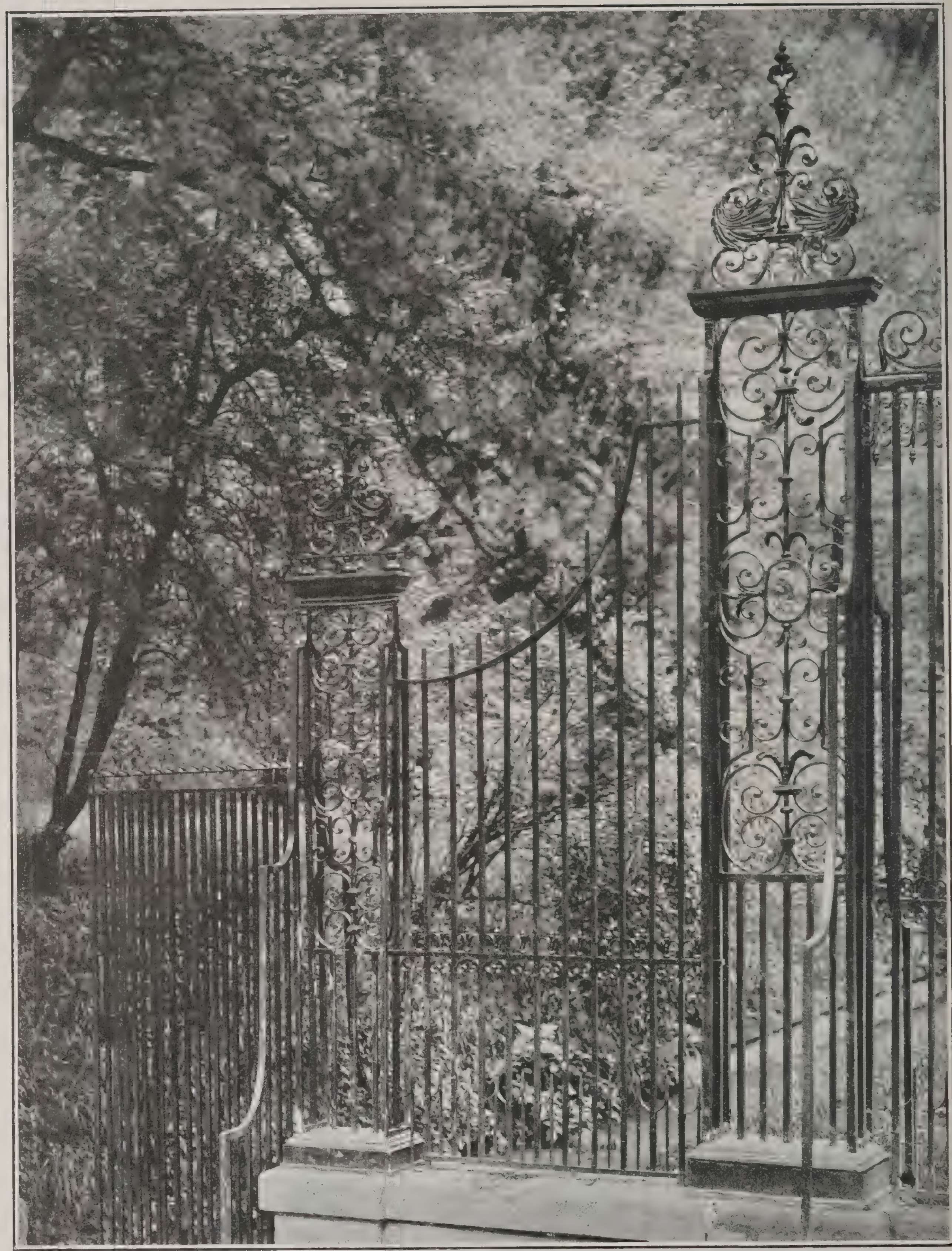
WEDNESDAY,
SEPTEMBER 6th, 1911.

Volume XXXIV. No. 867



DETAIL OF PLASTERWORK OVER A THEATRE PROSCENIUM. BY G. WILSON.

(See " Modern Plasterwork," page 255.)



This gate is at the "Backs," close to the well-known example facing the river front of Clare College. The ironwork is admirable alike in design and execution.

DETAIL OF SIDE GATE, ST. JOHN'S COLLEGE, CAMBRIDGE.

THE ARCHITECTS' & BUILDERS' JOURNAL.

SEPTEMBER 6th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 867.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

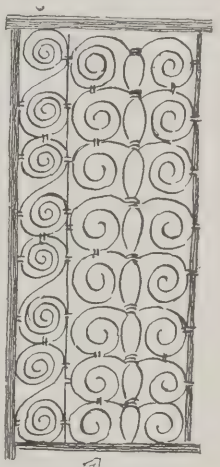
Decorative Ironwork.

IRON not being called a "precious metal," having a high commercial value as material, nor possessing, like silver and gold, a beauty and lustre of colour and surface, has rarely been used for the making of objects of pure ornament. It is, more especially than any other, the metal for applied art k; for treating ornamentally that which is in the first ance an object of utility. And being also the strongest of metals, it has been largely used for work which is in the ire of a fence—a gate or a protecting screen, which may nade an object of interest in itself, instead of being a barrier. Gates are in fact among the most prominent numerous examples of decorative ironwork. An English nple, and a very good one, the entrance to one of the ege enclosures at Cambridge, forms the subject of our tration on the page opposite.

the decorative treatment of ironwork as a fence there are methods that may be employed. One is to arrange the tructional lines of the ironwork in an interesting and rative form; the other is to add details, generally more or less floral form, which are purely ornamental, do not form part of the structural design, though they , and in general should, appear to depend on and develop of it. The ductility of iron when hot gives the facility rich and effective work both in structural design and in d ornamental detail, but it also constitutes a temptation er-elaboration, for the mere sake of displaying cleverness xecution, which has spoiled a good many designs. The collection of ironwork in the long gallery at the Victoria Albert Museum affords instructive examples of both good bad design.

e best praise one can give to a design in iron is when we say that, besides being pleasing to the eye in its lines, it sents what is specially characteristic of iron and could e so well done in any other material. There is an almost rous instance of this in a German iron-bound coffer near ast end of the South Kensington Gallery. This, which ted 1716, is covered on the lid with conventional foliage e usual classic type, chased work, charming to look at, aving no specially metallic character; it is work that have been better done, with less expenditure of labour, rd wood. The metal-worker's characteristic little joke s in at the angles of the coffer, where a suggestion of an shaft is made in the shape of a close upright spiral of iron twist, crowned with an orthodox little classic cap. id iron shaft would have been commonplace and clumsy; piral imitation of it is elegant and amusing, and could have been done in wrought-iron. As a contrasted example ay notice the iron shutters with pierced panels from the el of the Counts of Flanders at Ghent (sixteenth century), up near the same point. These are of 1-8 in. sheet iron, y pierced through in elaborate but not very interesting ns; the sort of thing that would be done with a fret-saw vood panel. There is nothing of specially metallic char- about it, and one looks at it with the reflection—was it the trouble?

In Early English metalwork, the mere fact of the ductility of iron, and the display of it in curls and scrolls, seems to have been enough for the artificer's satisfaction; enough, too, to produce a really rich decorative effect founded on the capacity of thin stems to be twisted into spirals, as in Fig. 1, which represents a corner of the thirteenth-century screen from Chichester. In each division the arrangement and proportions of the spirals are different, yet the whole, or at least the considerable portion of it in the South Kensington Gallery, has a perfectly harmonious and uniform appearance. In this case the metal bars forming the spirals are exceedingly thin, and their square section on that small scale presents no obstacle to their rather playful treatment. When the metal is heavier in section it becomes important, if it is to be used in scrolls, that its section should be such as both to be and to appear easily bendable in one plane rather than in another. The want of this special character of section is what gives such a commonplace appearance to much of the German grille-work, where the main lines are formed with what look like lengths of gas piping, not only presenting no facility for bending in one direction more than another, but having a wretchedly thin effect both in front and in perspective. For the effective treatment of scrollwork design we want a bar of flat section, with the narrow edge forming the face of the design. A bar of such section, while obviously easy to bend in the plane of the grille, presents in perspective an appearance of breadth and solidity which can never be obtained by the German gaspipe designs, besides being actually stronger against any side impact. The character is well shown in the two companion grilles of Italian workmanship (late seventeenth century), two bits of which are sketched in Fig. 2. Drawn out in elevation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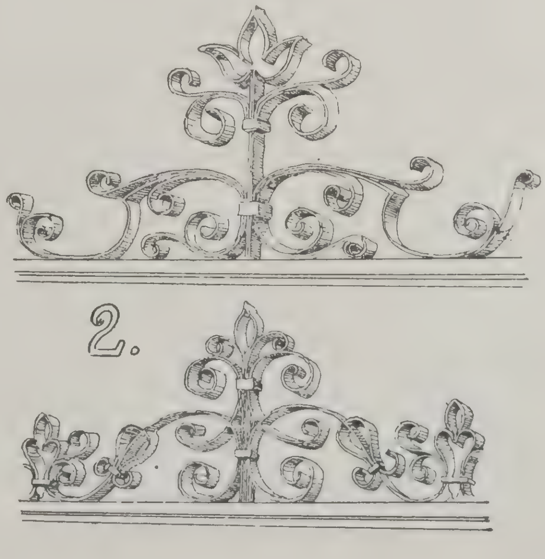
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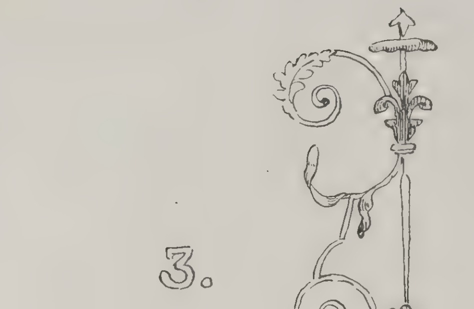
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this would seem a thin design on the face, but then one never sees it in mere elevation. This design illustrates two important points in work of this class. First, it will be noted that all the curves are tangential at their springing; they do not jump out from each other at odd angles. In the lower example some of them cross each other; the junction is made by halving them, a slit being cut out halfway across each bar, on their opposite sides. But the springing of all the curves is tangential. The other point is, that a certain distant resemblance to floral forms is just suggested here and there, but it is in a purely conventional manner, by the modelling of the shapes by the strapwork, without a hint of realism. These two points are at the root of a great deal of difference between good and bad design in decorative ironwork.

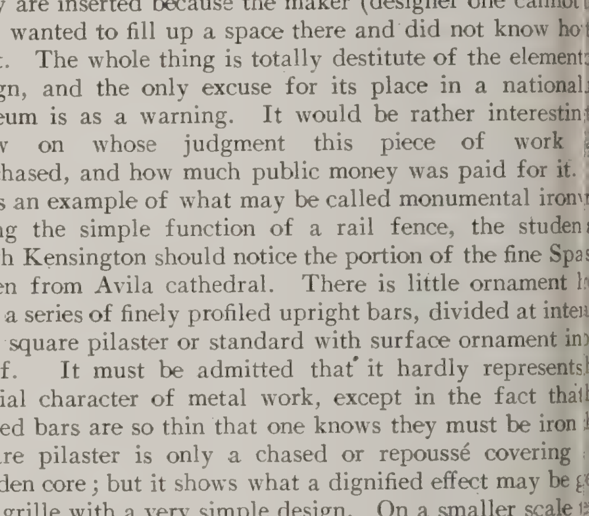
Where it comes to a question of adding anything of the nature of floral ornament in wrought iron, two principles must be carefully remembered. One is, that the structural lines of the ironwork must always be kept in evidence. Floral ornament should spring or develop from them, never overlay or hide them. A fine example of how to do this is to be seen in the two grand and richly worked Italian candlesticks (eighteenth century)—candelabra one might rather call them—which stand at each side of the steps leading down from one of the large courts into the ironwork gallery at South Kensington. The basis of the design is a series of scrolls ascending so as to make a pyramidal form, the scrolls large and bold at the base and narrowing as they ascend. Upon the upper curves of the various scrolls are riveted a series of finely designed conventional leaves of the acanthus type; they are attached and not worked out of the scrolls, but their lines are designed so that they join tangentially to the scrolls. The whole is rich in the extreme, but there is a logical method throughout the design, and the structural basis of the whole is completely visible. The only thing that these candelabra seem to want is a solid circular base to rest on; they do not seem quite fitted to stand directly on the floor; and we should be inclined to think that in their original position they had some kind of base.

The importance of this preservation of the structural line becomes apparent if we compare it with examples in which this principle has been ignored. There is a German Renaissance window screen in the Museum, the one illustrated on page 49 of Mr. Starkie Gardner's "Handbook" to the ironwork (Part II.), which is simply crusted with leafage, so that the
whole thing looks perfectly ragged and all structural appe
ance is lost. And in connection with leafage it has to
remembered also that any attempt at realistic foliage in ir
work is a fatal mistake; and it is a mistake to which the v
ductility of wrought iron has often tempted the artificer.
seems so easy to mould and twist thin metal into any shape
likes, that he is led to show how near he can go towards
imitation of a natural flower; and the moment that is d
there comes the disagreeable contrast between the shape of
natural flower and the hard and in this sense unlovely mate
in which its soft tender petals are imitated. There is
place in art for realistic imitation of flowers and foliage
cept in painting; and even there the best flower-painting, s
as Fantin-Latour's, is not in fact realistic imitation. And
worst of all, perhaps, in ironwork, is when (as we too o
see) a branch or sprig of realistic leafage is wantonly inse
in the midst of typical conventional foliage. That is
lowest deep of false taste; the mixing up of two things w
are in quite different planes in reference to nature.

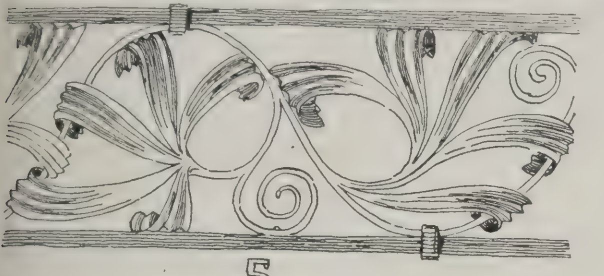
We may take as the "horrid example" the sketch, Fig
of part of the head of an English screen of the sevente
century, once at Frome and now at South Kensington.
illustrates about every defect that wrought iron design c
have. The main or structural lines of the work are weak
bad, without central motive or style; the conventional foli
what there is of it, is badly put on; and in the space ben
and on each side of the shield are introduced two natural
sprays, the lower ends of which carefully imitate the app
ance of a twig that has been torn away from the main bra
They are inserted because the maker (designer one cannot
him) wanted to fill up a space there and did not know ho
do it. The whole thing is totally destitute of the element
design, and the only excuse for its place in a national
museum is as a warning. It would be rather interestin
know on whose judgment this piece of work
purchased, and how much public money was paid for it.

As an example of what may be called monumental iron
filling the simple function of a rail fence, the studen
South Kensington should notice the portion of the fine Spa
screen from Avila cathedral. There is little ornament
only a series of finely profiled upright bars, divided at inte
by a square pilaster or standard with surface ornament in
relief. It must be admitted that it hardly represents
special character of metal work, except in the fact that
forged bars are so thin that one knows they must be iron
square pilaster is only a chased or repoussé covering
wooden core; but it shows what a dignified effect may be
to a grille with a very simple design. On a smaller scale
is rather a nice example in the English eighteenth century a
rail, Fig. 4; the alternation of the modelled rounded up
with a base, and the plain square one, is in very good t
and the scroll buttress which stiffens the whole is well tre

In the matter of conventional foliage in ironwork it n
be worth while to try Nature occasionally for a new type,


4.

ided always that one avoids realism. Fig. 5 is one suggestion om a tropical plant, *Licuala Horrida* (*horrida* does not mean orrid,'' only "prickly''), which looks rather conventional en in its natural state, and suggests a long striated leaf ferent from anything that has been used in metal work. ough there is something like it in a piece of German wood



5.

ving somewhere at South Kensington (we say "somewhere'' ause things have been shifted so in the new building). The f has been actually worked, with effect, into a wrought- n street sign, which, however, disappeared with the nolition of the front to which it was attached.

The Castle Howard Mabuse.

HE Trustees of the National Gallery have bought from Rosalind Countess of Carlisle, for £40,000, the famous "Adoration of the Kings'' by Jan Gossart, of Mabuse, wn as "the Castle Howard Mabuse.'' Towards the cost 0,000 was contributed through the National Art-Collections nd, the National Gallery Board supplied £15,000 from ds at their disposal, while the Government conditionally anced £15,000, and the duty payable, to complete the chase.

he picture, which is placed on exhibition in Room XI. of National Gallery, was painted about 1500 for the Abbey Grammont in East Flanders, whence it was purchased in 5 by the Archduke Ferdinand to decorate the high altar he Court Chapel at Brussels. In the eighteenth century assed into the collection of Prince Charles of Lorraine, ernor-General of the Low Counties (d. 1775), and thence that of Frederick, fifth Earl of Carlisle, at Castle ward. It is the latest of the great masterpieces of Flemish enth century art, and none other is at this day in so perfect brilliant a state of preservation. It belongs to the earlier of the master, before his manner changed as a result of journey to Italy. It is of large dimensions, about 7 ft. by , and besides the principal personages contains more than ty figures of men and angels, with an extraordinarily rich animated background of architectural landscape. The ls and hands are painted with the utmost power and pre- n according to the tradition of the Van Eycks and their owers, and the costume and ornaments are treated with almost miraculous richness of invention and detail. The t has signed his name in full on the crown of one of the i.

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he Principalship of the L.C.C. Arts and Crafts School.

HE offer of a salary of £1,000 a year for a full-time principal for the London County Council Central School of Arts and Crafts, Southampton Row, having failed ttract a suitable applicant, the Council have decided to ase the salary to £1,200, and, at an early date, will eed to make the appointment. In addition to high qualiions as a practical artist, administrative and organising ty is essential. The principal must also be in touch with ndustrial application of the work of the school. Applica- should be made on Form T 1/17, which can be obtained from the Education Officer, L.C.C. Education Offices, Victoria Embankment, to whom they must be returned not later than 11 a.m. on October 7th next, accompanied by three testimonials of recent date. Full particulars of the work of the school and the conditions of the appointment can be obtained on application to the Education Officer, as above.

The Building Trades Census of Production.

IN another part of the present issue will be found a summary of the returns relating to the building and contracting industries as required by the Census of Production Act, 1906. As these returns are for the year 1907, or portions of that year, it is at once evident that whatever value they may possess must be greatly discounted by their staleness. Nor is this the only drawback. It is of little use to know how matters stood in 1907 if there are no means of comparison with other years. The figures do not tell us whether we were then marching forward, retreating, or merely marking time; and as the year to which they relate may not have been at all typical, it is quite possible that they may create an entirely erroneous impression—which is perhaps all the better from a strategic point of view, seeing that the idea of instituting such a census seems to have originated in the desire of militant politicians to score off each other in arguing for or against fiscal reform, and seeing also that our foreign competitors in the world's markets are so keenly interested in spying out the nakedness or otherwise of the land. If, therefore, it should turn out that the statistics are almost useless, the main reason for regret is that so much effort and money should have been expended in collecting them. If this waste were confined to the public services engaged in realising it, there would be much less ground for complaint than that which appears when we remember to how much grave inconvenience private firms have been put in ascertaining and supplying the details of their business operations. To be quite fair, however, it must be admitted that all the trouble imposed on private firms need not be written off as dead loss and hindrance. The Act has probably had the effect of compelling some firms of builders and contractors to employ a very useful, not to say highly necessary, process of stock-taking, and to ascertain and analyse their basic data with the fresh interest which comes of a new object. The returns, such as they are, not only serve to show a firm its own standing in regard to the incidence of revenue and expenditure, but serve also to provide in the mass data from which it is quite possible that useful deductions and generalisations may be made, more especially in the future, when the averages of a series of years may be taken. As it is, certain useful if superficial inferences may be drawn as to the relative magnitudes, earnings, and profitableness of the various businesses involved, the relative numbers of men employed, the relative amounts spent in wages, in salaries, in production, and in other directions, the relative demand for and cost of various materials, the relative extent of private as compared with public undertakings, and so forth. These comparisons, however, must be worked out for themselves by those interested in them; for at present the Blue Books give no assistance in this direction beyond a rather crudely simple presentation of the facts that have been collected. Perhaps their interaction, their permutations and combinations and comparisons, may be eventually shown in a supplementary volume. Not till then will their significance and utility be adequately realised. In the meantime, however, the shrewd trader may be able to form, even from materials of such dubious validity as those supplied by the Blue Books already published, deductions that may possibly help him to a clearer recognition of the trend of business, and suggest to him means of increasing and improving his opportunities and of modifying his procedure. In doing this, he will observe all the caution born of a knowledge that these preliminary returns do not and cannot pretend to absolute accuracy, and that, as already pointed out, they represent, more or less imperfectly, the operations of a single year that very possibly may have been in some respects absolutely exceptional and phenomenal, and that therefore its records may be illusory and misleading.

The Replanning of Paris.

ON reassembling after the vacation, the Conseil Municipal of Paris will have under consideration the great project for demolishing the fortifications and converting their sites into open spaces. Insular ignorance had assumed that this matter was already settled, and that the great town-planning scheme on which France is prepared to spend the equivalent of thirty millions sterling had been definitely decided upon. It now appears that this is not the actual fact, as the subject is yet debatable by the Conseil Municipal. Nevertheless, there is every reason to suppose that the proceedings will be merely formal, and that the full and final acceptance of the proposal is a foregone conclusion. Paris is not likely to delay, still less to reject, this splendid opportunity of linking up and extending her already enviable large area of parks, gardens, and open spaces, and of girdling herself with a green belt. Paris will gain greatly in grace, and will not suffer much loss of dignity, when smiling greenswards are substituted for frowning fortresses.

Coating "Cleopatra's Needle."

CLEOPATRA'S Needle, which was placed on the Victoria Embankment just thirty-three years ago, is undergoing a complete renovation by the London County Council. It is fifteen years ago since it was last washed down by the fire hose, after which a preservative preparation was applied to save the obelisk from the damaging effects of the London atmosphere. This is the first occasion on which a scaffold has been erected round the Needle, which reaches to a height of 87 ft. 6 in. During the past week the hieroglyphics, which are inscribed on the sides of the obelisk, have been scrubbed with plain water, after which a coating of paraffin wax was applied. The question of the best preservative against the deleterious effects of the London atmosphere has engaged the careful attention of the Council's chemist, and, after numerous experiments, it has been found that paraffin wax gives the best results.

The Rebuilding of Waterloo Station.

THE new South Station at Waterloo, on the London and South Western Railway, being now nearly completed, the main line platforms are being reconstructed. This is the second stage in a remarkable railway development which, it is believed, will make Waterloo one of the finest railway centres in the Metropolis. Until now it has proved a collection of antiquated sheds with all sorts of byways and annexes that made it absolutely puzzling to the stranger. If he arrived a few minutes before the time of his train he ran the risk of finally reaching the correct platform after its departure, for the tramp from the north to the south stations represented a considerable distance, and the route was devious and oftentimes difficult on account of the congestion of traffic. At present the new South Station, with its glass roof, supported by massive iron girders borne by great pillars, towers above the other older buildings abutting on the Waterloo Bridge Road, but on a higher level. A block of offices has been completed for the use of the superintendent's staff, and for the convenience of the general public. The ticket-office is now a handsome hall, with ample accommodation for a rush of passengers, and arranged so that bookings can be made with ease and comfort, as well as rapidity. In the old days the booking-offices had long outgrown the enormous traffic that has come to the South Western Railway. The platforms are hig broad, and convenient, and communication is made from ea one to the subways for the Waterloo and Baker Street tub as well as that of the Tube railway to the Bank. When t main-line portion is ready then the North Station has to remodelled in accordance with the general scheme. T London railway stations are being reformed very graduall but very effectually as regards convenience. In the matt of æsthetics, however, no approach to the dignity and sum tuousness of foreign stations seems to be in sight; and it not pleasant to be told, with constant reiteration, that the fir thing which strikes the foreigner on arriving in London the meanness, if not the positive ugliness, of our termini. most instances, while the engineer is doing his work ve well indeed, the architect is too little in evidence.

The Lost Gold Cross of the Kremlin.

WHAT is a Kremlin? It is simply a fortified e closure or citadel; but, for people outside Russi there is only one Kremlin—that at Moscow. It has perimeter of nearly a mile and a half, and its brick walls a of formidable thickness and height. Inside there are ma churches and chapels, including the Cathedral of the Annu ciation, which dates from the fifteenth century, and a st earlier Cathedral of the Assumption; while an imperial palac although it was rebuilt in 1840, retains intact some portio of a much earlier structure, and is remarkable also for semi-Oriental decoration. Next year there are to be centena celebrations in Moscow, and in collecting mementoes of t Napoleonic invasion, enquiries have been made regarding t fate of the great cross of Ivan Veliky, the church whi dominates the Kremlin. This cross was pulled down at t command of Napoleon, who is said to have believed th although it was sixteen feet high, it was made of solid gol and by removing it he intended to punish the Russians f setting fire to the city, to add a glory to the dome of t Invalides, and perhaps to gratify in some measure the sup stitution which formed no insignificant element of his compl mind, or perhaps to work upon the superstition of the Russian who were understood to associate the cross with the fortun of their country. The cross, however, had to be abandon on the march to Smolensk, and was supposed to have be sunk in Lake Semlevo. The lake having been recently draine careful search has been made in the hope of finding the cro which, however, is now believed never to have left Mosco but to have been buried under the wreckage in the Kreml when its buildings were blown up by order of Napoleo Moreover, it appears that Napoleon was mistaken as to t identity of the cross; the real gold cross remaining undetect on one of the churches which escaped destruction. That Russian architectural decoration all that glitters is not go may be inferred from the statement that much of the decor tive "bronze" in the great cathedral of St. Isaac, in Petersburg, is really electrotype! and the authority who mak this revelation adds, somewhat superfluously, that archite of other nations may profitably go to Russia to study, but n to copy.

The Rebuilding of St. Mark's Campanile.

THE two principal architects for the rebuilding of Mark's Campanile at Venice, Signori Piccentini a Del Piccolo, promise that the work shall be complete finished by the end of April next year. The tower fell July 14th, 1902, and the work of its re-erection was co menced in April of the following year. Cardinal Giusep Sarto, now Pius X., was present at the beginning of the construction, and when he became Pope he presented magnificent set of bells for the Campanile. The belfry h just been finished. Great pains have been taken by t architects to reproduce the antique beauty of the tower. T nous logetta of Sansovino, an architectural gem of sculp- ed marble, crushed by the fall of the tower, is being re- oduced under the personal supervision of Signor Del ccolo. It is expected that King Victor Emmanuel will open new tower.

Apothecaries' Hall.

HE Society of Apothecaries has instructed Messrs. Farebrother, Ellis, Egerton, Breach, Galsworthy, and Co., to let about 12,000 square feet of surplus land at its mises in Water Lane, Blackfriars, E.C. Thus appears be foreshadowed important changes in an old-world area which most of the quaintness was destroyed to make room the London, Chatham, and Dover Railway line and its tion at Ludgate Hill, which is itself about to be remodelled. will be a pity if the old paved courtyard of the hall is to be iterated. The society acquired the land nearly 300 years , the property having previously been known as Cobham use, and it belonged to Lady Howard of Effingham. The mises then extended to the Thames, and occupied a larger a than the present buildings. In the vicinity were many ed places, such as Baynard's Castle, once held by the Fitz- ters, and the theatre, now recalled by Playhouse Yard, the lishing office of "The Times." Pepys in his Diary men- is that he attended a performance at Apothecaries' Hall of e acts of *The Maid in the Mill*, by Fletcher and Rowley. hall was destroyed by the Great Fire of London. In 1695 rence was made to the new hall "seated almost opposite to Paved Alley, that leadeth to the Ditch Side, down steps inst Bridewell Bridge." An open courtyard seems at that e and since to have been a feature of the premises. Among names on the roll of the society are those of Tobias llett, Jenner, Oliver Goldsmith, George Crabbe, and John ats.

State Conciliation Boards.

UILDERS, as the largest employers of organised labour, may be expected to pay very special attention to the Bill presented by Mr. Will Crooks recently. The sure proposes that, wherever any dispute exists between mployer and any of his employees, and the parties thereto unable to adjust it, either of the parties to the dispute may e application to the Board of Trade for the appointment Board of Conciliation and Investigation, to which Board dispute may be referred under the provisions of the Bill; the Board of Trade, whose decision shall be final, shall, in fifteen days from the date of the receipt of the applica- , establish such Board. Every Board shall consist of three bers appointed by the Board of Trade, one on the recom- dation of the employer, one on the recommendation of the loyees (the parties to the disputes), and the third on the mmendation of the members so chosen. Every application the establishment of a Conciliation Board shall include a utory declaration that, failing settlement of the dispute eference to a Board under the Bill, a lock-out or strike may leclared and that necessary authority to declare such has obtained. Witnesses failing without good reason to ear when summoned shall be liable to a penalty not ex- ing £20. Two clauses deal with the prevention of lock- and strikes prior to or pending reference to Boards, and relations of parties pending the Board's reports. One ision imposes upon employers causing a lock-out contrary e Act a fine of not less than £20 nor more than £200 per that such lock-out exists. Penalties for striking contrary e Act are punishable by fines from £2 to £10 per day, persons inciting employers to lock-outs or employees to es are liable to a fine varying from £10 to £200. Either y may agree in writing, at any time before or after the rd has made its report and recommendation, to be bound he recommendation of the Board, and such recommenda- shall be legally enforceable.

The members of a Board are to be remunerated for their services (out of moneys to be provided by Parliament). Employers and employees are to give at least thirty days' notice of an intended change affecting conditions of employment with respect to wages, and where a dispute is referred to a Board the relations of the parties are to remain unchanged pending the report of the Board. One's general impression from this summary is that the measure apparently creates more difficulty and inconvenience than it is likely to allay, and that many of its provisions are impracticable.

With these brief notes of the scope of Mr. Crooks's Bill it will be useful to compare the provisions of the very similar Bill that has been placed before the Legislature of New South Wales, and the very able commentary on it supplied by a special committee of the New South Wales Master Builders' Association. (See page 265.)

New Reredos for Wistow Parish Church.

FOR a new reredos which is about to be placed in the parish church of Wistow, near Selby, Yorks, the carving has been done by Mr. G. W. Milburn, sculptor, of York, who has received valuable assistance from his son. To Messrs. J. & T. Biscomb and Sons, builders and contractors, of York, has been entrusted the work of making and fixing the reredos, which was designed by Mr. Walter H. Brierley, architect, of York. The reredos, which is now almost completed, is composed of Austrian wainscot oak, the dark hue of which is most appropriate. The reredos is 9ft. in length, while the side panelling extends to 11 ft. The entire work is fashioned after the style of the fifteenth century, and across the centre the Biblical quotation, "Looking unto Jesus the Author and Finisher of our Faith," has been carved, while immediately above are four figures in canopies with tracery and crocked pinnacles, representing St. Aidan, Bishop of Lindisfarne, in the act of blessing St. Hilda, Abbess of Whitby, with crozier in the right hand, and a small model of Whitby Abbey in the left. The third depicts St. Chadd, Bishop of Lichfield, holding a small model of Lichfield Cathedral, with crozier, mitre, alb, chasuble, and surplice; while the fourth represents St. Cuthbert, Bishop of Durham, holding the head of King Oswald, and robed in cope and mitre and holding a crozier. The reredos is to be formally dedicated by the Archbishop of York some time this month.

"The Best City in Germany."

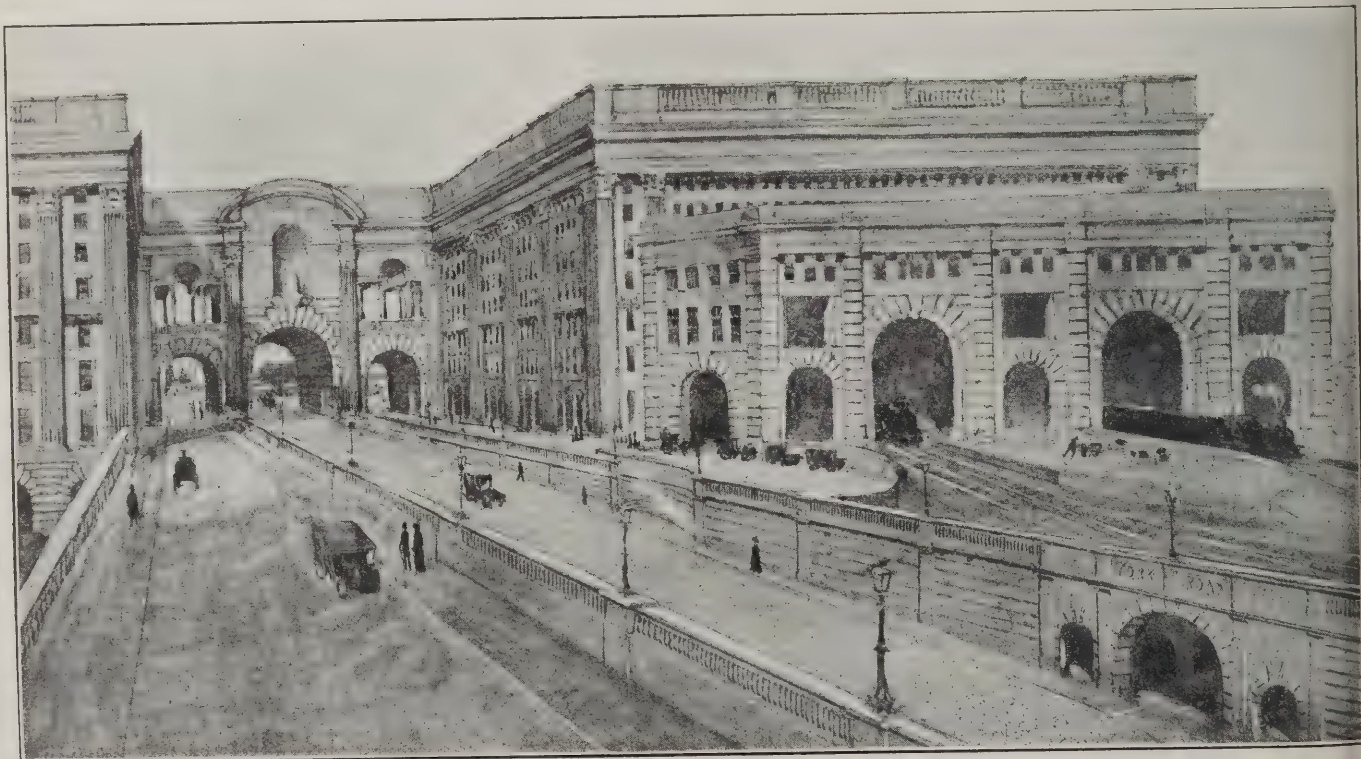
WRITING under this heading in the "Daily Mail," Mr. Richard Capell says: "Dresden has its lovers, but in the memories of how many hundred thousand travellers does Munich hold pride of place as the most charming, the joyfullest of German cities? The holiday spirit finds little harbour in the strenuous northern towns. But Munich is its home. The city has a fair and friendly air that promises welcome and entertainment. . . . You remember vista after vista of nobly designed streets and squares and monuments, and the musical splash of a score of graceful fountains. In their rocky bed the opaque, pale-green waters of the Isar dash through the town with an impetuousness unchecked by months of drought. The river's course is a series of cascades and rapids, with hundred-feet-high banks, adorned with miles of gardens. One recalls interminable galleries of the brilliant work of the Munich painters, and it is pardonable if in one's memory there is some confusion between these exhibitions and the no less fascinating poster hoardings. . . . The twin-rounded towers of the Gothic baroque cathedral serve as a suggestion that one is a third of the way from London to Constantinople, while fantastic Czech and Polish names in the picture-gallery catalogues tell of the alluring proximity of the Slav world. . . Abel Faivre not long since prophetically portrayed a party of art lovers touring through a picture gallery in a motor-car. Munich should be the scene of this innovation, for the art galleries there must be measured by miles. The Munich artists' exhibition of some thousands of canvases, now being held at the Glass Palace, is one among many. After thoroughly exploring it you have probably marched as far as a Territorial in a day's manœuvring on Salisbury Plain. This collection, notwithstanding the audacity and crudity of much of it, represents the conservative and traditional side of the Munich art world.

"A stone's throw away is the Secessionists' exhibition. Secessionist art, a French wit has said, stands in regard to 'art nouveau' in the relation of raving madness to mild lunacy. But there are secessionists from the Secessionists and several thousand of their exuberant works are enshrined in another vast collection—the 'Jury-less Exhibition.' Other modern pictures are to be seen at the National Museum and a score of world-renowned picture dealers invite you to prolong interminably your orgy of canvas and paint. Out of this flux of temporary picture-shows the sculpture at the Glyptothek and the pictures at the Schack Gallery and the Old and New Pinakotheks stand out in the pride of permanence. . . ."

Peruvian Archæology:

THE meetings of the British Association at Portsmouth last week did not offer much material of any direct professional concern to architects and builders. Two papers, however, on archæology in Peru, by Miss A. C. Breton, deserve mention, as relating to matters of considerable interest architecturally. The ruins of Chichen Itza, in Yucatan, said Miss Breton, are amongst the most important in Central America, being especially remarkable for the number of coloured portrait sculptures and frescoed walls. The frescoes have been sadly destroyed in the course of centuries, but enough remains to provide striking pictures of the life of the ancient folk. The building at the south end of the eastern wall of the great Ball Court, usually called Temple of the Tigers, contains in its upper part the best-preserved paintings yet discovered. The outer chamber having been filled with *debris* owing to the fall of the roof when the wooden lintels gave way, the inner chamber also became partly blocke and difficult of access, until Dr. Le Plongeon in 1884 cleare away most of the accumulated material, and partly copied th paintings in it. Visitors wrote their names over the frescoe bats lived at one end, swallows at the other, and bees ma tunnels in the plaster. Still it has been possible to secu many of the details and to give some idea of the compositio The chamber was about 26 ft. long, and not quite 8 ft. wid and 22 ft. high to the top of the vault, with the door in th middle of the long western side. Each of the long sides wa divided into three panels, of which the four end ones represe landscapes full of armed warriors, as do those of the nort and south sides, with houses above, and tents and tempora buildings below, where chiefs were consulted and priests pe formed the rites of divination. These panels were divide by a blue band from a dado with mythological figures an plants.

Miss Breton said the amazing richness of Peru in antiqu ties was seen in the galleries of the National Museum at Lim which Dr. Max Uhle had filled with the results of two year excavation in the region of Nazca, the neighbourhood of Lim and near Trujillo, all coast civilizations. In the bay Ancon, the first settlements of primitive fishermen were on th side hills which slope to the sea, where the rocks are cover with shellfish. Then followed the wide-spreading tow which filled the sandy area between sea and mountains, know from Reiss and Stübel's book as the Necropolis of Anco but now proved to have been a series of skull heaps and reed huts, which decayed or were destroyed after the owne had been buried under them with their possessions wh others were built above. The accumulated material cover a space more than a mile square and 30ft. high. The grav were small pits lined with pebbles. Dr. Uhle spent sever years in excavating at Pachacamac for the University Pennsylvania, and had been able to form some idea of th sequence of the different kinds of pottery from his finds the and in other places. The beautiful painted pottery at I and Nazca proved to be earlier on the coast than any othe and the primitive fishermen learned the art of vase-painti from the proto-Nazca folk.

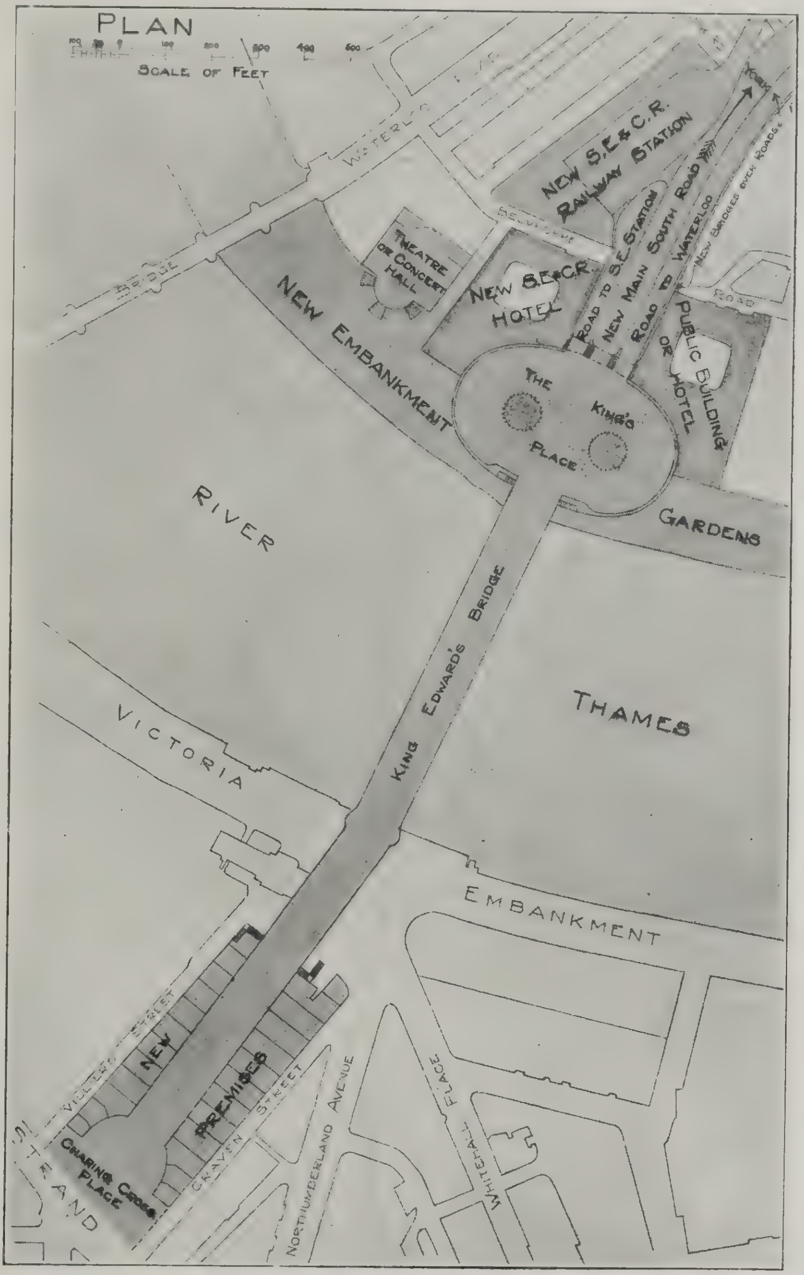


SUGGESTED SCHEME FOR NEW BRIDGE ACROSS THE THAMES AT CHARING CROSS AND TRANSFER OF S.E. AND C.R.
STATION TO SOUTH SIDE OF RIVER: PERSPECTIVE VIEW LOOKING FROM SOUTH SIDE. W. L. LUCAS, ARCHITECT.

A KING EDWARD'S BRIDGE SCHEME.

HE proposed removal of Charing Cross station to the south side of the river has been the subject of various articles and correspondence in newspapers and other riodicals during the past twelve months, and the project substituting for the existing Hungerford Bridge a new idge for general traffic has been favourably received. In rticular may be mentioned a striking article, entitled "A ing Edward's Bridge," by Captain Swinton, in "The ineteenth Century" for January, 1911.

Sketches showing such bridge have been made others, but none of ese appear to have dealt iously with the questions street alterations and els on both sides of the er, nor with the possiities of development, ecially on the south le. The present scheme, illustrated in our Centre ate and in the text hereth, shows a "Place" off Strand in lieu of the sting Charing Cross tion yard. From this ce a street 100 ft. broad, h shops on both sides, uld lead towards the v bridge (also 100 ft. de), to which there uld be access both from lliers Street and Craven eet by means of wide ne steps. The bridge inated on the drawing is imple one, harmonising character with Waterloo idge. On reaching the ith side, the road from bridge debouches into elliptical "Place," ere two fountains surnded by balustrades uld divert the traffic into ee roads. The western d would take traffic to l from Waterloo station, which new and easy ess would thus be obned instead of the exist- ascent by the north tion, which is very convenient and unisfactory. The centre y would be the new n road going south, cending by a gradient of 1 in 18 to York Road, and thence Waterloo Bridge Road. It should help to open up the lieus of New Cut and its surroundings. The eastern road the ellipse would take traffic going to and from the South stern and Chatham Railway station, where vehicles would dealt with much more freely and quickly than now at ring Cross.



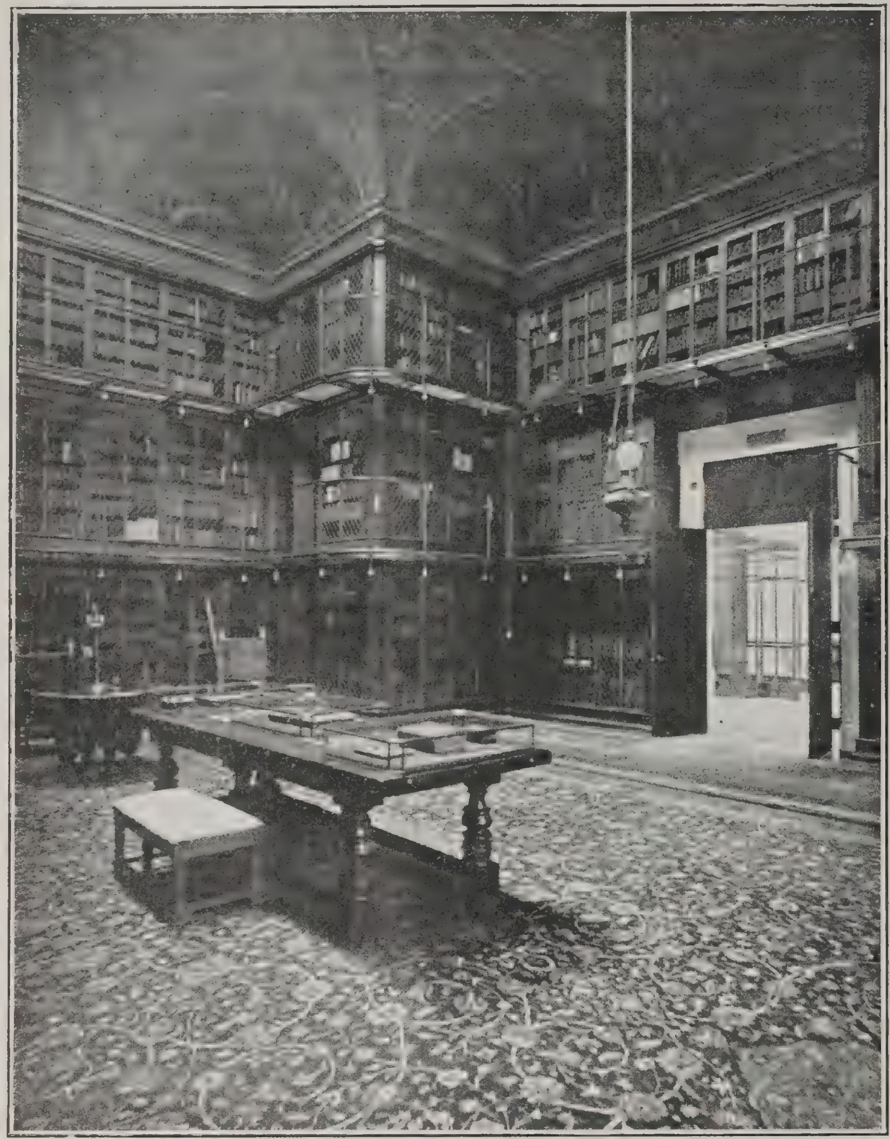
SCHEME FOR NEW BRIDGE AT CHARING CROSS AND TRANSFER OF S.E. AND C.R. STATION. W. L. LUCAS, ARCHITECT.

f the plan of the new station be examined, it will be found e wider than Charing Cross station; and although the ting South Eastern Railway south of York Road is not nded to be interfered with, it is hoped that the new station ld present railroad advantages for dealing with the conflict between main line and suburban traffic that are not possessed by Charing Cross station. It is impossible to enter into details of this part of the scheme here; but it may be stated that the necessity for shunting would to a large extent be obviated by enabling a number of trains to make a circuit, and that a project involving a through railway connection between the south and north of London would have relation to the scheme.

Two large blocks of buildings are shown having frontages to the elliptical "Place," and thus practical frontages to the river. The eastern one is appropriate for a new South Eastern and Chatham Railway Hotel adjoining the new station, whilst the western block might be suitable for a London and South Western Railway Hotel in conjunction with Waterloo. The lower storeys of these buildings would descend on their east, south, and west sides to the level of Belvedere Road, to which they would have frontages as well as to the new small side streets formed on their flanks and leading down to the new Embankment Gardens.

On the "Place" itself the buildings forming a semi-ellipse would have an arcaded ground storey, the pavement of which would become a promenade for pedestrians, who would be attracted there by shops and cafés suited to such a position. The north ends of the semi-ellipse would be arcaded in the basement storey, where they would "give" on to the Embankment Gardens. The east and west portions of these gardens would meet in a colonnade under the roadway and bridge. On the centre of the long arc of the ellipse the buildings would be united by three arches, which, apart from their architectural advantages, would gain merit in determining the direction of the traffic. Over the side arches, and reached by flights of broad stairs, are public *loggie*, connected by a passage above the centre arch. Over this centre arch on the north side would be a statue of King Edward VII. looking down into the elliptical "Place" which would bear his name; whilst behind, on the south side, would be a fountain whose waters would descend to feed the fountains below. From King Edward's Place, foot-passengers would go by easy steps down to the new Embankment Gardens, which would extend from Waterloo Bridge on the east to the new County Council offices on the west.

Although the general scheme is here illustrated on a small scale only, it may be stated that it has been worked out in some detail, especially as regards the south side, of which the main architectural features have been drawn out to ⅛ in. scale.



View in East Room.

MR. PIERPONT MORGAN'S LIBRARY

Happy is the man who, combining wealth with taste, is able to realise his æsthetic ideals. Mr. J. Pierpont Morgan is in this happy and enviable position. It has been written that "the Bookman's Paradise sung by Andrew Lang and Austin Dobson, the perfect library imagined by many another lover of volumes that are precious and beautiful, the vision that has seemed impossible of realisation, the Soria-Maria Castle where all the dreams of the bibliophile come true—the Bookman's Paradise exists." It is at No. 33, East Thirty-sixth Street, New York, and its architects are Messrs. McKim, Mead, and White.

The loggia is entered through sixteenth century bronze doors of exquisite workmanship. The vaulted ceiling, the decorative paintings by Mr. H. Siddons Mowbray, the mosaic panelling of the side walls, the beautiful pavement of rare and costly marbles, combine to produce a harmonious ensemble. The only furniture of the loggia comprises two fifteenth century chairs recently withdrawn from the British Museum; the only movable decoration a bronze bust of the Marquis of Pescari, ascribed to Benvenuto Cellini.

The librarian's room faces the entrance to the rear; Mr. Morgan's private room is at the west side, on the left of the entrance
to the loggia; the east room holds t
famous collection of books and prin
which Mr. Morgan has brought together.

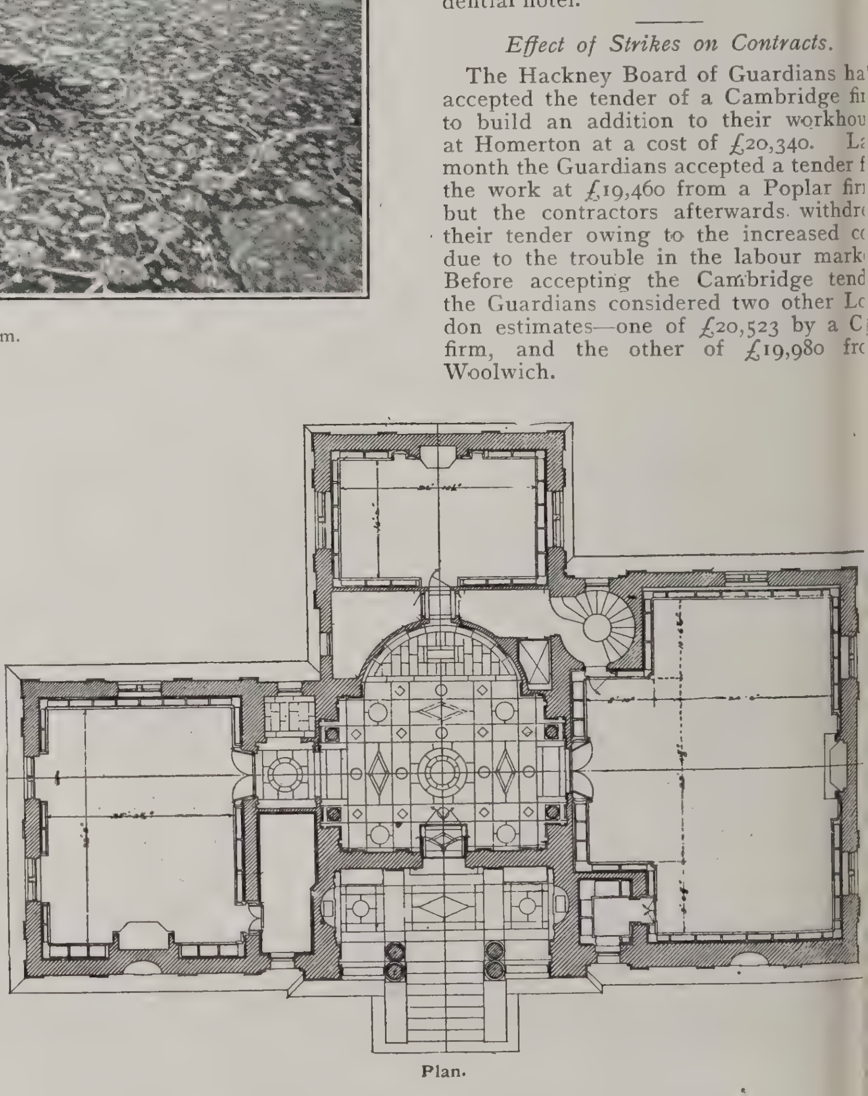
The gallery floors and the book-shelv
are of glass; the books, however, are n
enclosed in glass, the only protection bei
a light ornamented grille, permitting t
titles to be read with ease. The ceiling
this room is from the Aldobrandini Pala
at Venice. The stained glass througho
the building has been collected duri
many years. It is mostly of Swiss a
German origin, and has been very skilful
adapted to its present purpose. In the ea
wall of this room is fixed a fifteen
century fire-place, over which is hung
rare specimen of beautiful French tapestr
The library, whether or not it may
regarded as a Bookman's Paradise,
certainly a splendid repository for the ra
treasures—the costly incunabula and t
antique specimens of art—which it w
built to house. It is sumptuous witho
being lavish or undignified. But a re
Bookman's Paradise would be less hau
ingly rare and precious of environme
and contents. The average book-lov
would be unhappy in it.

"Star and Garter" Sold at Last.

The "Star and Garter" at Richmo
has been sold for £20,000 to a priva
client, after having been closed for t
past three or four years. It is stated th
£30,000 is to be spent on modernising t
building and making it a first-class re
dential hotel.

Effect of Strikes on Contracts.

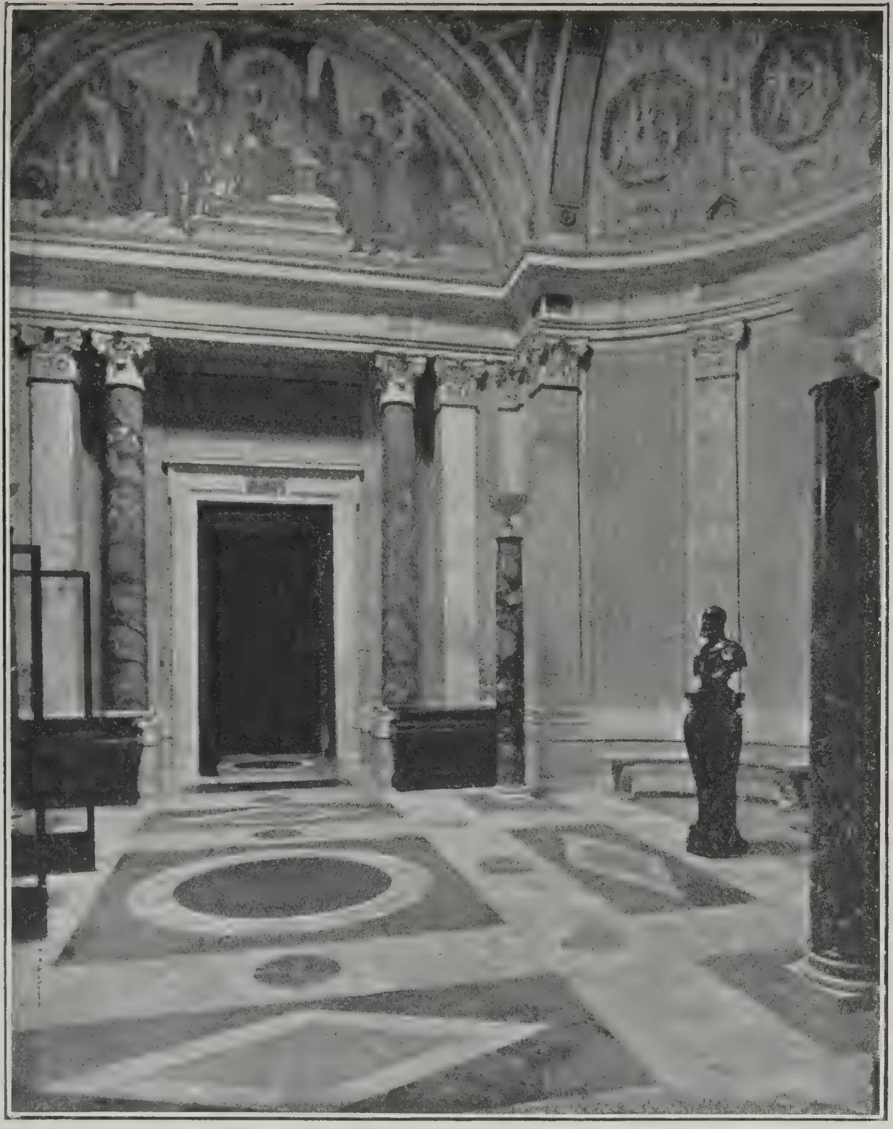
The Hackney Board of Guardians ha
accepted the tender of a Cambridge fi
to build an addition to their workhou
at Homerton at a cost of £20,340. L
month the Guardians accepted a tender
the work at £19,460 from a Poplar fi
but the contractors afterwards withdr
their tender owing to the increased c
due to the trouble in the labour mark
Before accepting the Cambridge tend
the Guardians considered two other L
don estimates—one of £20,523 by a C
firm, and the other of £19,980 fr
Woolwich.



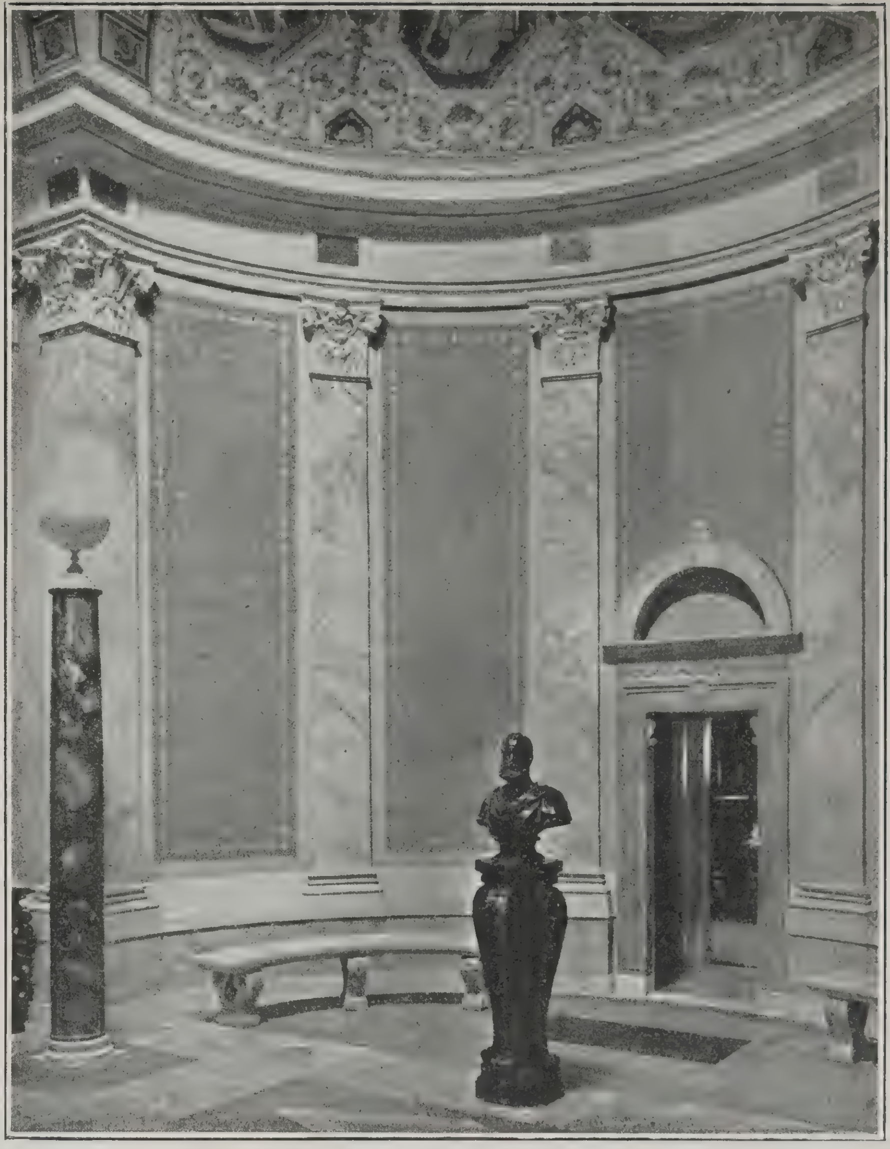
Plan.

MR. J. PIERPONT MORGAN'S LIBRARY, NEW YORK.

McKIM, MEAD, AND WHITE, ARCHITECTS.



Entrance Loggia, looking West.



Entrance Loggia, looking North.

MR. J. PIERPONT MORGAN'S LIBRARY, 33, EAST THIRTY-SIXTH STREET, NEW YORK. McKIM, MEAD, AND WHITE, ARCHITECTS.

CITY AND GUILDS OF LONDON INSTITUTE.

When the holiday season is palpably waning, the young man's fancy lightly—very lightly at first, and perhaps rather listlessly—turns to thoughts of educational effort; and already the programmes of evening classes, and the like, are being widely circulated. Among the first batch of these is the programme for the session 1911-12 of the City and Guilds of London Institute Department of Technology. It may be useful to recall that the Institute was founded in 1878, incorporated under the Companies Acts in 1880, and was granted a Royal Charter in 1900. It is an association of the Corporation and Livery Companies of the City of London, instituted "for the purposes of all such branches of science and the fine arts as benefit or are of use to or may benefit or be of use to productive and technical industries especially and to commerce and industry generally, or any branch thereof, and for the utilisation of such means as will promote the several exclusive purposes aforesaid." The operations of the Institute are divided broadly into four gineering) College; (2) the City and Guilds gineering) College: (2) the City and Guilds Technical College, Finsbury; (3) the City and Guilds South London Technical Art School; and (4) the Department of Technology, to which the programme under notice bears special reference.

The examinations held by the Institute embrace no fewer than 75 subjects, which include many that pertain more or less directly to the art and craft of building. There are examinations in Painters' Oils, Colours, etc.; Gas Engineering and Gas Supply; Iron and Steel Manufacture; Electrical Engineering; Plumbers' Work; Slate Quarrying; Carpentry and Joinery; Brickwork; Masonry; Plasterers' Work; Painters' and Decorators' Work; Builders' Quantities; and Heating and Ventilation; and Structural Engineering, including "a general knowledge of the principal systems of ferro-concrete construction as applied to buildings." Here, we think, the terminology is slightly inexact; "reinforced concrete" is a more comprehensive term. The programme includes a list of qualified teachers in technology.

A GIANT SUBWAY SYSTEM.

With her expanding population New York finds it daily evident that her present network of railways is quite inadequate to cope with the transit requirements of the city, and accordingly it has been determined to proceed with a colossal scheme of underground traction which will be sufficient to meet the needs for many years to come. The whole undertaking to be financed by the City Treasury.

Mr. William R. Willcox, chairman the New York Public Service Commissio who is at present in London, has explaine the scheme to a representative of th "Evening Standard and St. James Gazette." "The new subway system, said Mr. Willcox, "will extend from th borough of the Bronx, which is th northerly part of the city, through Man hattan and Brooklyn to the sea at Cone Island. It will also connect with th Queen's, on the east, thus utilising fo transit purposes the Queensboroug Bridge, as well as the Williamsbur Bridge and the Brooklyn Bridge Ultimately the system will also be con nected with the borough of Richmon and all parts of the city.

"We do not have the zone system fares in New York as you have in Londo and at present it is possible to travel an distance on the subways for 5 cents (2½d. When the new railways are completed th fare will remain the same, so that it wi be possible to travel 17 or 18 miles fo the 5 cents.

"The new works will be completed i five years, and the contracts already l amount to twenty-five million dollar while contracts for a further fifty millio dollars will be let before the end of th year. The total distance of the new sub ways will be about 75 miles.

"The general plan of the new subway is for the road to run comparatively nea the surface, and the stations will b approached by stairs instead of elevator except in certain cases."

ADDITIONS TO LLOYD'S BANK, NEWCASTLE.

Considerable extensions and alteration have been made to the Lambton branch Grey Street, of Lloyds' Bank, Ltd. Adjoin ing premises were obtained, which wer rebuilt, the basement and ground floo were added to the Bank, and the uppe floors are for use as offices. The bank i fitted up in mahogany. The floor of th public area is of vitreous and cerami mosaic, and that behind the counter is oak, while the floor of the managers' an consulting rooms is finished with par quetry. The general contractors wer S. F. Davidson and Miller. The mosaic i by Emley and Son, Ltd.; the fireplace are by Henry Walker and Son, Ltd., an Emley; plastering by Davidson and Mille and John Chapman; electric installatio by S. Gillitt; locks and hardware by N. F Ramsey and Co.; painting and decora tion by John G. Cole, and Davidson an Miller: heating by the R. J. Ward Co. all of Newcastle. Stanchions, columns an girders by Dorman Long and Co., Ltd Middlesbrough; fireproof floors by th Fawcett Construction Co., Ltd., Green wich; wood block floors and parquetry b the Art Pavements and Decorations, Ltd. London; sanitary fittings by Doulton an Co., Ltd., London; electric passenger lift by Waygood and Co, Ltd., London, an Pickerings, Ltd., Stockton-on-Tees, wit a specially built basement lift by Picker ings; electric fittings by Best and Lloyd Birmingham, and Veritys, Ltd., Man chester; entrance doors by the Van Kanne Revolving Door Co., Ltd., London. Ne fittings, counters, desks, etc., which are i mahogany, were made by Robson an Sons, Ltd., Newcastle. The whole of th work was designed by and carried ou under the personal direction of Mr. Joh W. Dyson, architect, Newcastle, Mr. C. H Davies having been the clerk of works.

MR. J. PIERPONT MORGAN'S LIBRARY, NEW YORK: MANTEL IN EAST ROOM.

UILDING INDUSTRIES CENSUS OF PRODUCTION.

Last week was issued a Blue Book (Cd. 13; Wyman and Sons, Ltd., Fetter ne, E.C.; price 10d.) representing the th of a series of tables summarising preliminary results of the returns der the Census of Production Act, 1906, gether with a short report by the Direc- of the Census. This issue relates iefly to the building and contracting des, quarries, and public utility ser- es.

About 144,000 schedules were issued to ns and companies engaged in the in- stries indicated, and to public authori- s, and the average number of persons ployed in 1907 (to which year the figures mally relate) in those industries is stated being about one million. The schedules the building and contracting trades, gas, waterworks, and electricity under- ings, and for local authorities, were pared in consultation with special visory committees appointed by the ard of Trade, and the schedules for other trades were prepared after con- tation with trade associations and re- sentative manufacturers.

The "output" shown in the Tables is gross output of each trade, i.e., where ods pass through the hands of several nufacturers at different stages, their antity and value has been registered at h stage. Similarly, where work such building work has been partly sub- to sub-contractors, the value of the ole work and of each of the parts so sub- has been independently recorded. The lue of this gross output is therefore eater than the value of the goods ready export or consumption manufactured each trade considered as a unit, or n the value of the work done by each de considered as a unit, and the value the "materials used" shown in the bles is, for the same reason, greater than actual value of the materials used by h trade.

In the case of the returns received from al and other public authorities, canal, ck, harbour, and similar companies, mway and light railway companies, and National Telephone Company, in pect of works of construction, altera- n, upkeep, and repair executed by their n workpeople, the amount stated as value of the output is a sum covering ges, cost of materials, and the estab- ment charges attributed to the works question. It thus represents the cost the works, and is not strictly compar- e with the value of the ouput returned building and contracting firms, which n a profit basis.

The result of deducting the total cost materials used from the value of the ss output for any one industry or group factories is to give a figure which may, convenience, be called the "net out- " of the industry or the group. This re expresses completely and without lication the total amount by which the ue of the products of the industry or up taken as a unit exceeded the value the materials purchased from outside— , it represents the value added to the materials in the course of industrial cesses. This sum constitutes for any ustry the fund from which wages, aries, rent, royalties, rates, taxes, reciation, advertisement and sales ex- ses, and all other similar charges, as l as interest and profits, had to be rayed. The net output of local and er public authorities, canal, harbour, k, and similar companies, tramway and light railway companies, and the National Telephone Company, represents only wages and establishment charges (but not interest, etc., on loans), and is not strictly comparable with the net output of building and contracting firms, which contains the element of profit.

The following short statement shows for the United Kingdom as a whole the gross output, the cost of materials used, the amount paid for work given out to other firms, the "net output" as above defined, the number employed, and the net output per person employed for the industries covered by the present report:—

	Gross Output. Selling Value or Value of Work Done. (1)	Materials Used. Cost. (2)	Work Given Out. Amount paid to Other Firms. (3)	Net Output. Excess of Column (1) over Columns (2) and (3). (4)	Persons Employed. (5)	Net Output per Person Employed. (6)
	£	£	£	£	£	£
Building and Contracting Trades ..	87,967,000	38,609,000	6,404,000	42,954,000	513,961	84
Heating, Ventilating, and Sanitary Engineering. Factories and Workshops	2,885,000	1,277,000	43,000	1,565,000	14,144	111
Slate Quarries	1,148,000	104,000	—	1,044,000	14,240	73
Limestone Quarries	1,908,000	495,000	—	1,413,000	16,188	87
Quarries, other than Slate, Limestone, and Iron	3,775,000	534,000	—	3,241,000	43,184	75
Miscellaneous Factories and Workshops	7,813,000	2,998,000	51,000	4,764,000	50,822	94
Gas Undertakings:—						
(*a*) Companies	20,838,000	9,292,000	—	11,546,000	54,946	210
(*b*) Public Authorities	10,769,000	5,037,000	—	5,732,000	28,585	201
Waterworks Undertakings:—						
(*a*) Companies	2,172,000	445,000	—	1,727,000	4,716	366
(*b*) Public Authorities	8,437,000	1,110,000	—	7,327,000	17,343	422
Electricity Undertakings:—						
(*a*) Companies	3,182,000	1,186,000	—	1,996,000	8,499	235
(*b*) Public Authorities	5,721,000	2,149,000	—	3,572,000	14,199	253
Total	156,615,000	63,236,000	6,498,000	86,881,000	780,747	—

It is unnecessary to reproduce here the table relating to the local authorities of the United Kingdom, canal, dock, harbour, and similar companies; tramway and light railway companies; H.M. Naval Buildings at home; H.M. Office of Works and Public Buildings; the Board of Public Works, Ireland; H.M. Post Office (Telegraph and Telephone Undertakings); and the National Telephone Company. For these the total under the first column is £26,451,657; under the second, £11,769,633; while the total number of persons employed is 219,361. The largest item under column 1 in this table is naturally that relating to the local authorities of England and Wales, the "selling value" of whose gross output was £17,031,000, while the cost of the materials used is set down at £7,124,000; the persons employed being 142,653.

The following statement summarises particulars that are set forth in more minute detail in other tables given in the report:—

Buildings.	Construction	Alteration and Repair	Construction, Alteration, and Repair, not Separately Distinguished	Total
	£	£	£	£
Private Premises (Residential, Trade, or Business) ..	32,025,000	23,782,000	6,825,000	62,632,000
Public Premises	5,732,000	1,319,000	469,000	7,520,000
Places of Public Worship and Buildings connected therewith	1,537,000	544,000	190,000	2,271,000
Private Premises, Public Premises, and Places of Worship not separately distinguished	65,000	49,000	877,000	991,000
Total	39,359,000	25,694,000	8,361,000	73,414,000

In addition, there are tables showing the totals for jobbing work (carpentry, wheelwrighting, engineering, smiths' and other work—£158,000; goods made for sale (monumental stone, coffins, heating and ventilating apparatus, boats, furniture, machinery, and other goods)—£325,000; goods made for use in building and contracting work (manufactured joinery, deals and mouldings, shop fittings, building stone, bricks, other building materials, and roadmaking materials—£419,000. The gross value of the work done and goods made is stated at £87,967,000. The total cost of materials used by builders and contractors in the United Kingdom was £38,609,000. The total number of wage-earners was 476,359; of salaried persons, 37,602; grand total, 513,961.

A table showing construction other than buildings gives returns with respect to railway construction, tramways, highways and bridges, sewers and sewage disposal works, harbours and docks, canals and waterways, river and sea walls, waterworks, gas mains and works other than buildings, land drainage works, telegraphic and telephonic lines and works, electric lines and works, and "other works of construction." The grand total for these is £13,651,000, the largest item—£2,335,000—coming under railway construction. Under "buildings" is included not only work of construction and repair undertaken by firms of builders, but also carpentry, painting, decorating, paperhanging, and similar work done on buildings occupied or to be occupied by private persons or companies for residential, professional, trade, or business purposes; while "public premises" include all buildings owned, occupied or used for the purposes of the powers and duties of public or local authorities, and the administration of justice, and all subsidiary buildings connected therewith.

For the heating, ventilating and sanitary engineering factories and workshops, the total output is valued at £2,885,000, the cost of the materials used being £1,277,000, the average number of persons employed being 14,144.

Values of output for allied industries are as follows: Slate quarries, £1,148,000; limestone quarries and lime kilns, £1,908,000; quarries other than slate, limestone, and iron, £3,775,000; miscellaneous factories and workshops, £7,813,000; gas companies, £20,838,000; public gas undertakings, £10,769,000; waterworks companies, £2,172,000; public water supply, £8,437,000; electricity companies, £3,182,000; public electricity undertakings, £5,721,000. The output value of all kinds of work done by urban authorities in England and Wales was £11,403,000; by rural authorities, £5,158,000; by miscellaneous authorities, £439,000; by all authorities, £17,031,000. The total for similar work in Scotland was £1,616,000; in Ireland, £1,308,000.

NEWS ITEMS.

New L.C.C. Asylum.

The London County Council contemplates erecting a new asylum at Horton at a total cost of £509,000. The money will be raised by loan, the entire debt to be liquidated in 60 years.

The Coming Congress at Rome.

Arrangements in connection with the ninth International congress of architects, Rome, October 2nd to 10th, have been made by the Royal Institute for a party to travel to Rome at special inclusive and reduced rates, varying from ten to seventeen guineas. Full particulars are given in the current issue of the Institute "Journal."

Fewer New Houses in Liverpool.

The report of the city building surveyor of Liverpool (Mr. John T. Alexander) on the work of his department during 1910 states that the number of houses erected during the year was 1,710, which is 439 less than in 1909, and 396 below the average for the past 12 years. The total number of houses in the city at the end of 1910 was 154,681.

The Riverside Fire.

The fire which broke out on Monday night last week at College Street, Belvedere Road, Lambeth, on the premises of Messrs. Pickford, Limited, caused damage which is estimated unofficially at £15,000. The official report mentions that the chief damage to Messrs. Pickford's premises is the destruction of a building of three and six floors, 100 ft. by 50 ft., used as offices and stores. About one-fourth of the timber yard of Messrs. Meredith Brothers, timber merchants, was damaged.

Rosyth Power Station.

Contract schedules have been issued for the erection of a power station in connection with the naval base at Rosyth now being constructed. The total cost of the Rosyth works was estimated at 3½ millions, and the quarter of a million which the power station is estimated to cost is part of that amount. The contractors for the whole work are Messrs. Easton, Gibb and Co., who are sub-letting the contract for the power station. It is stated that the freestone rock, quarried near Rosyth, is to be utilised for the power station.

In Favour of Cavity Walls.

At a meeting of the Cardiff Public Works Committee, Messrs. C. Hoare, G Burgess, and G. Leonard attended as a deputation from the Cardiff and District Builders' Association, to ask that in future builders be allowed to place cavity walls instead of solid walls at exposed pine ends of houses. The application, Mr. Hoare said, was peculiar, inasmuch as it would cost the builders more to build the walls asked for, but it would result in the houses being made dryer. At is was, with the brick-built pine end exposed to the weather it was often found necessary to cement them to prevent dampness from penetrating. The borough surveyor was asked to report on the matter.

Three New Libraries for Manchester.

The Manchester Library Committee have accepted the offer of Mr. Andrew Carnegie to subscribe £15,000 for the erection of three new branch libraries in the city. Withington, Didsbury and Chorlton-cum-Hardy are the districts selected.

Redecoration of Marlborough House.

We understand that in the re-decoration of Marlborough House for H.M. Queen Alexandra, which was executed recently by Messrs. Waring and Gillow, the enamel employed upon all the most important work, including the Royal suites, was Messrs. Thos. Parsons and Sons' "Endelflat."

A Remarkable Escape.

A painter named Charles Parker, who was engaged in decorating Paper Buildings, Temple, one day last week, had a remarkable escape from death. He was working in a "cradle" about 60 ft. from the ground when one of the ropes snapped. Parker fortunately fell into some shrubs, which broke his fall, but it was at first thought that he was seriously injured. He was taken to St. Bartholomew's Hospital, where it was ascertained that his injuries were only trivial.

Cost of the New Central Criminal Court.

In 1905 the Corporation raised a loan of £340,000 for the erection of the new Central Criminal Court in Old Bailey, of which the late Mr. Mountford was the architect. The expenditure on the building to the end of 1910 is now returned as £397,591, including site, £40,000; temporary cells, £5,320; builders' contracts, £304,040; designs and fees, £23,013; and furniture and fitting-up, £11,764.

St. Paul's Bridge Bill.

The Corporation of London (Bridges) Bill came before the Chairman of Committees (Earl Donoughmore) in the House of Lords on August 2nd as an unopposed measure, and was ordered to be reported, with amendment, to the House of Lords for third reading. The only matter outstanding is a question of drafting which is desired by the Southwark Borough Council and the London County Council. The Bill provides for the building of St. Paul's Bridge, the reconstruction of Southwark Bridge, and alterations at London Bridge.

Forthcoming Books.

Messrs. Hutchinson announce for publication in the autumn two volumes on "Westminster Cathedral and its Architect," by the architect's daughter, Mrs. W. de l'Hopital, with illustrations which include a series of colour plates from the late Mr. Bentley's own drawings. Messrs. Bell's list will include "French Architecture of the XVIth and XVIIth Centuries," by Professor Reginald Blomfield, A.R.A., in two illustrated volumes, uniform with the author's "History of Renaissance Architecture in England."

Timber Houses for Workmen.

At last week's meeting of the Billeric
(Essex) Rural District Council it was r
ported that the Local Government Boa
had written that they were prepared
consider proposals for the erection by t
council of timber-built cottages for t
working-classes, provided such proposa
were in accordance with local by-law
It was stated that, with this permissio
the council would be in a position to g
over the financial difficulty of erecti
houses to be let at a cheap rent to rur
labourers.

A Prehistoric Fortress.

At the sixty-fifth annual summer me
ing of the Cambrian Archæological Ass
ciation, which was held at Abergele la
week, Mr. Willoughby Gardner gave
lecture on the excavations carried out
him under the auspices of the Aberge
Antiquarian Association at the ancient h
fortress, Penycorddyn, near Abergele. T
main rampart defending Penycorddy
which comprised a total fortified area
37 acres, was 18 ft. wide. The top of t
rampart was provided with a broad fig
ing platform protected by a stone parap
There were three entrances to the fortre
one of which was specially re-excavated
inspection by the Cambrian archæologis
It displayed great engineering skill, a
was flanked by outworks, a remarka
feature being rectangular guard-chamb
on each side of the gates. The fortificat
had been deliberately pulled down, pr
ably by Roman soldiers in the first c
tury.

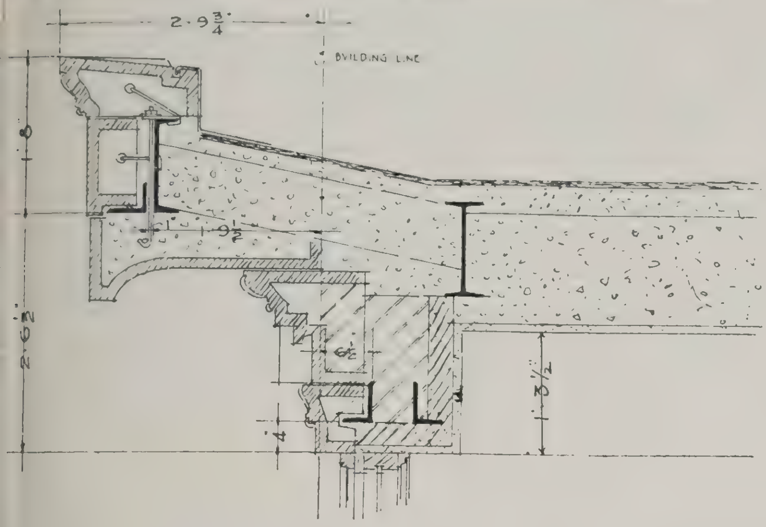
Institution of Municipal Engineers: Southern District.

Arrangements have been made
a meeting of the Southern Distr
of the Institution of Municipal
gineers to be held at Lewes a
Seaford on September 8th, when,
11 a.m., the party will meet at the Phœ
Ironworks, Lewes, and inspect the eng
eering and steel construction departme
all of which will be in full working.
12,30 luncheon at the Phœnix Instit
(adjoining the works) will be provided
Mr. Every, who will afterwards give
short address on ironwork. At 1.45
party will visit the foundry, where
process of moulding will be explained,
the operations of melting and casting
spected. At 3.10 they will leave by tr
for Seaford, where Mr. Boyd Miller,
gineer and Surveyor to the Seaf
U.D.C., will conduct members to the
compressing station, ejectors, and ref
destructor house under construction.
5 o'clock they will inspect the outfall,
afterwards take tea at the invitation
Mr. Miller, who during the afternoon
read a paper on "Seaford: A Few N
on its Drainage and Sanitary Admi
tration."

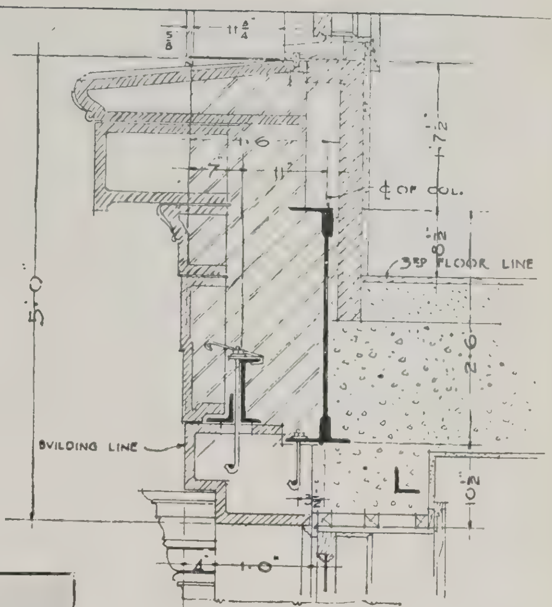
DETAILS, OLD AND NEW.–XX

American Terra-Cotta Construction.

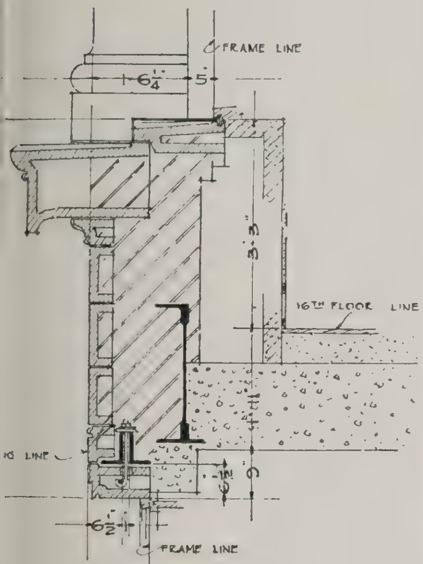
The drawing and photograph re
duced on the opposite page may be stud
as an example of modern fire-resist
construction as carried out in the Un
States under the direction of a well-kn
firm of architects, Messrs. D. H. Bu
ham and Co. The details are self-expla
tory.



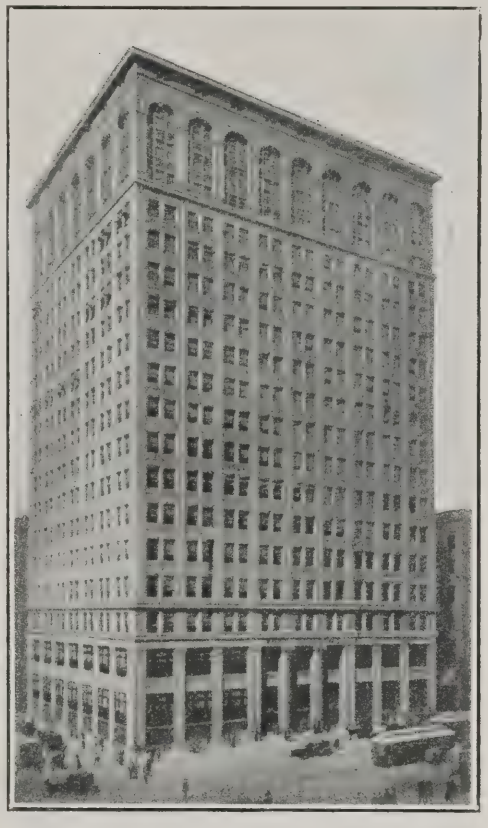
TYPICAL SECTION THRU MAIN CORNICE.

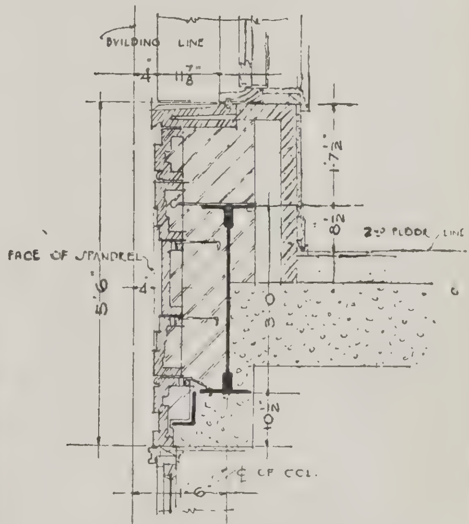


TYPICAL SPANDREL SECTION
3RD FLOOR

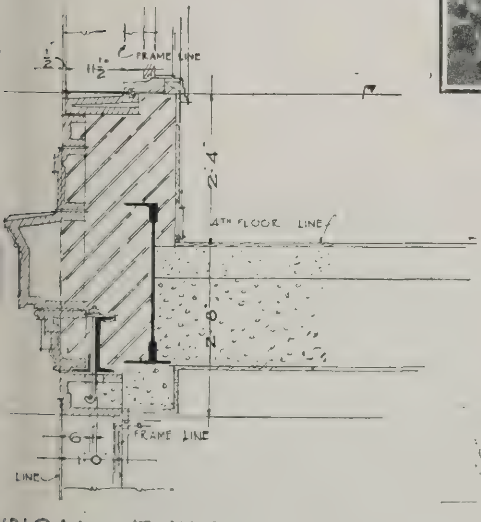


TYPICAL SECTION
16TH STORY BELT COURSE.

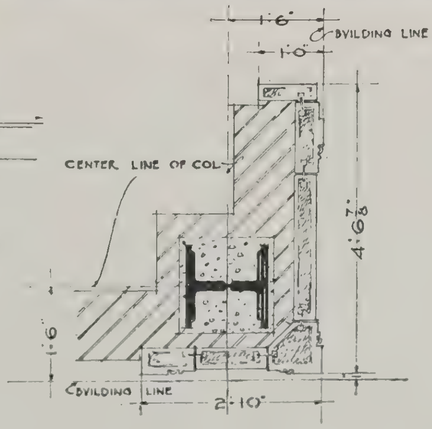




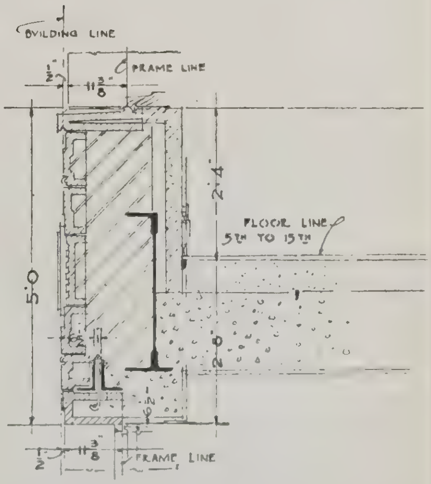
TYPICAL SPANDREL
2ND STORY



PICAL SECTION
STORY BELT COURSE



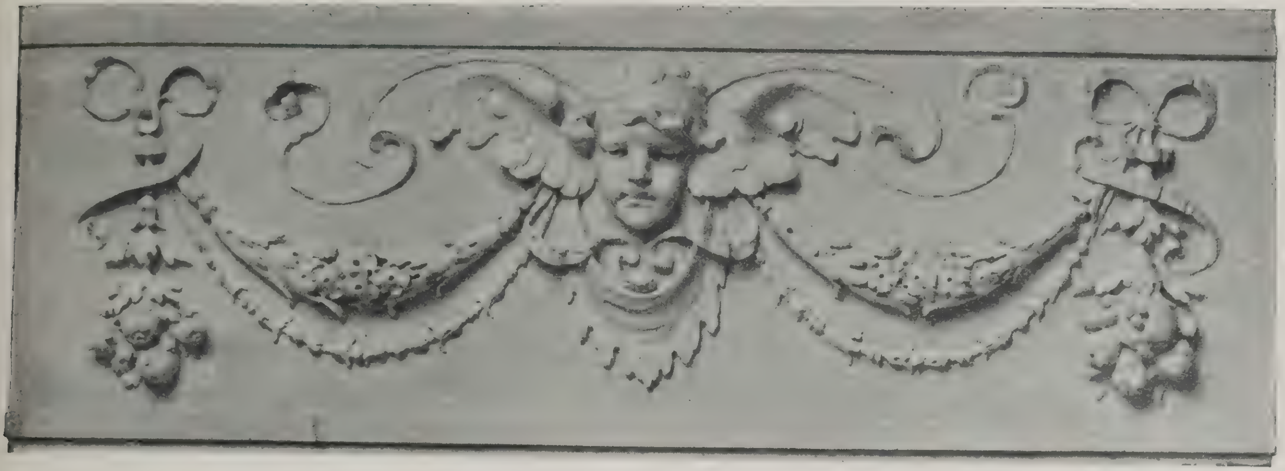
PLAN OF CORNER PIER



TYPICAL SPANDREL
5TH TO 15TH FLOORS

DETAILS OF AMERICAN TERRA-COTTA CONSTRUCTION: D. H. BURNHAM AND CO., ARCHITECTS.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



A PLASTERWORK PANEL.

MODERN PLASTERWORK.

lasterwork, in company with the other
ding crafts, has undergone radical
ıges within modern times. The hard
hanical forms of the nineteenth cen-
have been set aside, and the qualities
old plasterwork emulated. To
oughly appreciate what these qualities
one has but to do some modelling in
plaster, when the natural softness
delicacy of effect not to be produced
ny other material will soon be recog-
d. With regard to the precise treat-
ts appropriate to plaster, however,
siderable difference of opinion exists.
re is, for example, the opinion which
ts plaster to the expression of orna-
t in low relief with a lumpy, dull sur-
, avoiding sharpness and undercutting.
n there is the opposite school, which,
embering the work of the Italians at
tainebleau and elsewhere, pins its
to high relief and deep undercutting.
, again, there are those who believe in
legitimacy of both methods if used,
ectively, in situations appropriate to
values and effects. This last, in fact,
nly another way of saying that the
imate expression of plasterwork must
letermined by the particular circum-
ces of the building which it em-
shes. And therein probably lies the
of the whole matter, for it is obvious
the scale, form and depth of relief
ble for the decoration of a large
ic building would be entirely out of
ing in the average dwelling, more especially as our newer houses are conceived on the line of the cottage rather than the mansion.

Nevertheless, emphasis is well laid on the necessity for plaster to be modelled with a broad soft effect, as opposed to metallic hardness. The latter treatment is all too easy to attain when practically all decorative plasterwork is cast in moulds; yet even this precision, when attained, is not sufficient for some architects, who desire the plaster to be carved up to a degree of sharpness quite foreign to the material.

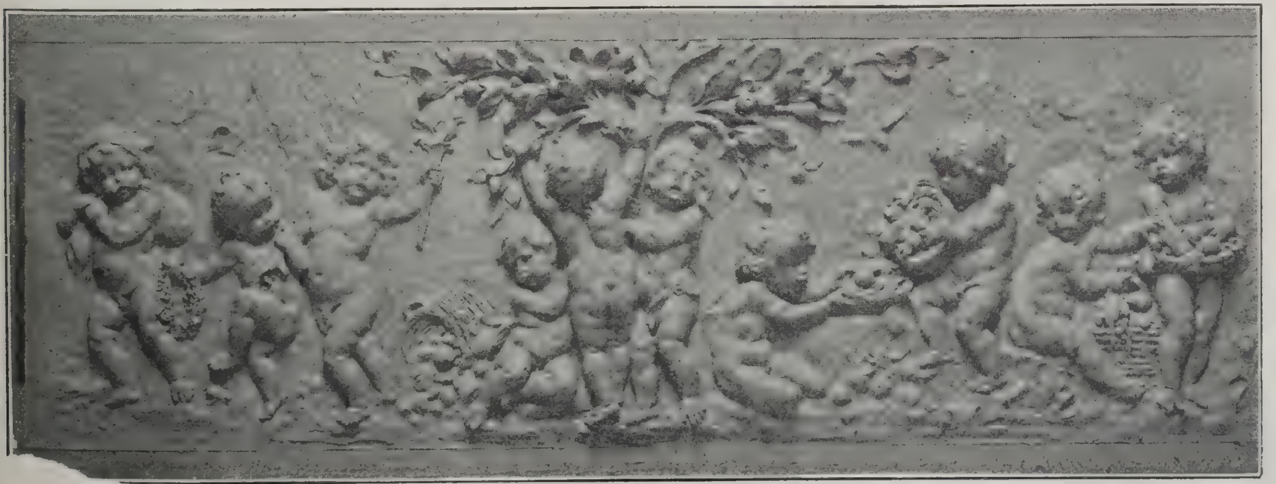
Undoubtedly in the revolt against the "mechanical precision" of the nineteenth century there is a danger of carrying a desirable reaction too far. The woodenness of much of the seventeenth century work, with its doll figures and impossible Biblical tableaux, however interesting to the student and art worker, scarcely entitles it to be given a foremost place in the annals of plasterwork, and the artist should be cautious of idealising it.

In illustration of some of the foregoing remarks three illustrations are given in this issue. The detail on page 239 is from the centre motif over the proscenium in a theatre designed by Mr. W. G. R. Sprague. It was executed by Mr. G. Wilson, of Messrs. G. and A. Brown, Ltd., who also executed the panel illustrated above. The enrichment in the smoking-room of a Liverpool hotel, shown below, is the work of Mr. Walter Gilbert, of the Bromsgrove Guild.

THE NEW SESSION OF THE R.I.B.A.

The following is a list of the meetings arranged for the next session of the Royal Institute of British Architects:—November 6th, President's opening address; November 20th, "Collegiate Architecture," by Edward P. Warren, F.R.I.B.A., F.S.A.; December 4th, business meeting; December 18th, "The Newer Responsibilities of Architects," by the Practice Standing Committee; January 8th, 1912, business meeting; January 22nd, "Colour Decoration," by Sir Alfred East, A.R.A., and Edgar Wood, F.R.I.B.A.; award of prizes and studentships; February 5th, President's address to students; presentation of prizes; February 19th, "Modern French Sculpture," by H. Heathcote Statham, F.R.I.B.A.; March 4th, business meeting; election of Royal gold medallist; March 18th, "The French Renaissance," by W. H. Ward, M.A., A.R.I.B.A.; April 1st, "Modern Methods of Construction," by William Dunn, F.R.I.B.A.: April 22nd, "The Royal Institute Library and some of its Contents," by C. Harrison Townsend, F.R.I.B.A.; May 6th, annual general meeting; May 20th, "Recent University Architecture in the United States," by Ralph Adams Cram; June 19th, business meeting; June 24th, presentation of the Royal gold medal.

The foregoing list, it will be observed, includes a majority of papers of live modern interest. This is as it should be. The Institute has had too much archæology and dead papers on dead subjects.



DETAIL OF PLASTERWORK ENRICHMENT IN THE SMOKING-ROOM OF A LIVERPOOL HOTEL.

BUILDING STONES FOR LARGE CITIES.

Mr. John Fawdry, Building Trades Exchange, 36, Cannon Street, Birmingham, has issued in pamphlet form a paper he read to the Birmingham Architectural Association last February "On Some Stones Suitable to the Atmospheric Conditions prevailing in Birimingham and similar Districts, with Some Observations as to their Character and Use." In it he emphasises the following points: (1) The vital importance of attention to the structural character, texture, and suitability of the stone for the work and district in which it is proposed to be used; (2) the necessity of completing the masoning and all stonework as it goes into the building; and (3) the importance of refraining from the habit of cleaning down the stone with the drag tool after the preservative skin has been formed, such cleaning and scrapping being absolutely ruinous to the stone, destroying its resistance to atmospheric action. He was prompted to draw up his paper by a desire to see stone reinstated in architects' specifications more frequently. He described in considerable detail the qualities and characteristics of stones from Hollington, Grimshill, Derbyshire, Bath (Corsham District), Nockney and Hartham Park, Weldon, and Yorkshire. The results of formal tests of various stones are tabulated, and there are lists of buildings in which some of them have been employed. The pamphlet is distinctly useful as well as interesting.

At the end of the paper the author says: I am often asked what quarry sap is. The best answer I can suggest is that it is dilute acid with silica, lime, and other deposits in solution. The moisture dries on the surface, leaving the solids deposited on the outer surface; the surface pores of the stones are then filled and the face hardened. It is important to bear in mind that evaporation and deposition of solids only takes place on the surface; therefore, the interior of the stone does not benefit in the same way. If the skin thus formed on the surface is removed by the drag tool to make it look fresh, the formation of such protecting skin is not repeated. I read the other day that Dr. Bather, F.R.S., of the British Museum, says that erosion was due to bacillus; that they are daily finding that microbes were responsible for processes hitherto believed to be purely due to physical causes; and states that "Sulphate of copper dressings are an excellent germicide and preventive agency"; but my own opinion is that if the structure of any stone was more attended to in selection no erosion would take place to require preservatives of any kind. It is, therefore, very important to keep this prominent, and to remember that all stonework should be finished before it leaves the "banker," and not be touched by a tool after it is in the building, but be simply washed down to clear off the adhering mortar.

Crushing Tests.

The lighter kind of stones will sustain a pressure of considerably over 200 tons to the square foot, and in columns even over 180 tons to the square foot, so that anxiety on this score, I venture to think, is given undue prominence, and the crushing test, I should say, is more to be regarded as showing the elastic and adherent properties of the stone, except where thrusts and loads are brought to bear on a small surface. The rectangular block is the best for these tests.

General Notes.

Sulphuric acid and sometimes hydrochloric acid are found in the air; both of these dissolve carbonate of lime, so that limestones and calcareous sandstones are the most susceptible to these acids; therefore, the structure of the stone is most important and should not be disregarded, and the more homogeneous the better.

It is of material assistance to visit quarries and ascertain how the long exposed faces of the workings have behaved, and also to inspect buildings that have been erected for a considerable time.

Bedding is very important. With undercut moulding stone it should always be fixed joint bedded.

Sandstones have large and angular grains, also small rounded grains; the latter are caused by moving water; the coarse and angular grained ones are invariably the stronger. The fossils in stone always lie flat on the beds. Weight of sandstones varies from 110 to 165 lbs. per foot cube.

Care should be taken to provide no lodgments on stonework for water, and drips should always be provided. So-called preservatives rarely or never preserve the stone permanently, but no doubt make them more waterproof, and arrest the process of decay for a time.

Sandstones should not absorb more than 5 per cent. of their dry weight of water, oolites not more than 8 per cent.

It would be worth the while of all large users of stone to keep a register of stones used, with particulars of character, structure, weathering properties, and behaviour under different atmospheric conditions. Meanwhile, it is well to rely on reputable quarries and owners for supplies, or to require good reliable evidence as indicated above before accepting stone from new sources of supply, and to be careful of plausible representations which are often misrepresentations, and the cause of much of the ensuing mischief. It is not always advisable to use an article because the advertisements speak well of it.

Suggested Causes of the Decay of Limestone.

Tempest Anderson, D.Sc., says: "The disease from which our stones are suffering is not a generalised surface abrasion; it is as strictly localised and circumscribed as a ringworm, which is a well-known parasitic disease. It is not a surface action at all, but, I believe, a decay or rot affecting the substance of the stone; and, like other decay effects, is in every probability caused by the action of some low organism. About two years ago I had affected stone treated with various germicides, and the stones which have since best resisted the decay were then treated with sulphate of copper (5 per cent. solution), bichloride of mercury, and creosote." He goes on to show that soot and dirt, combined with moisture, form a great breeding medium for lower organisms, which most likely destroy the stone through separation of acid. He further says that he also succeeded in obtaining thousands of colonies of bacteria from the powder of the stone. Whether these bacteria are the cause of the decay of limestone has still to be proved by successfully impregnating sound limestone; but in the meantime decaying material should be protected by keeping it dry and by treating it with a solution of vitriol, "as most low organisms cannot grow if deprived of moisture."

Dr. F. Rathgen, Berlin Museum, says, in a letter to the author:—"The question of bacteria I consider of no importance;
sulphorous and sulphuric acids are t
principal causes of the decay, accordi
to general experience, as the carbona
of lime are formed into sulphites and s
phates of lime; the specific weights
which are lighter than those of carbon
of lime. This must be followed by a d
coloration of the structure of stone.
after all, the stone contains magnesia
it did in the example Dr. Anderson gav
the easily melted or soluble salts of m
nesia come into existence, which crystall
with slight moisture of the air and hig
temperature, and which at least
partly dissolved with more moisture a
lower temperature. This happens
innumerable instances, and the cons
tence of the stone must suffer from it.
industrial quarters muriatic acid, in ad
tion to sulphuric acid, reaches the bui
ings; but I believe very seldom this
have a very bad effect, as calcium chlor
comes into existence (which is hig
hygroscopic). For instance, if there i
factory of muriatic acid in the neighbo
hood, the appearance named by Anders
that the pulverous decay appears in
actly marked places cannot be frequen
noticed. Perhaps it is due to vario
structures or growths of the stone.
instance, if there is a softer place in
stone, the decay will begin there, a
spread in a circular manner. There is
doubt that there will be bacteria in
decayed parts—anyhow, more than el
where. But this originates from
moisture in the pulverous parts, wh
offer a better condition of life to the lo
organisms. It is quite sure that the p
sence of these is bad. but I cannot ag
that they are the only cause of the dec

It is clear that creosote has a preserv
effect, as it refuses water. It is m
difficult to explain the effect of cop
vitriol and sublimate. It is a pity it
not been stated how these mediums w
applied. Certainly a space of two ye
does not seem long enough to note
preserving effect, and on the other h
it is not impossible that by killing th
lower organisms less moisture is kept ba
But even if, in the building in Yo
bacteria were the main cause of decay
the limestone, this should not be gene
ised. Another example may be referre
—viz., the Cathedral of Cologne. Si
the investigations of the Kaiser, it can
be doubted that in this case the deca
due to the sulphuric gases of the smo
Further, with some pieces of marble
I exhibited in Berlin it was noticea
after two years that the damaged surf
was partly changed into sulphate of l
or magnesia. Therefore it is my opin
that it should be firstly ascertained in
case of York through analysis of
sound stone and of the decayed pa
whether there did not come into existe
sulphate of lime or magnesia. Should
however, be proved that copper vitr
creosote and sublimate are a protect
for the stone, the use of the first two
not be recommended, as they tint
stone. Sublimate will not be of m
effect for long, as it soon gets reduce
calomel through the organic parts of
dust, and calomel will not kill the gern

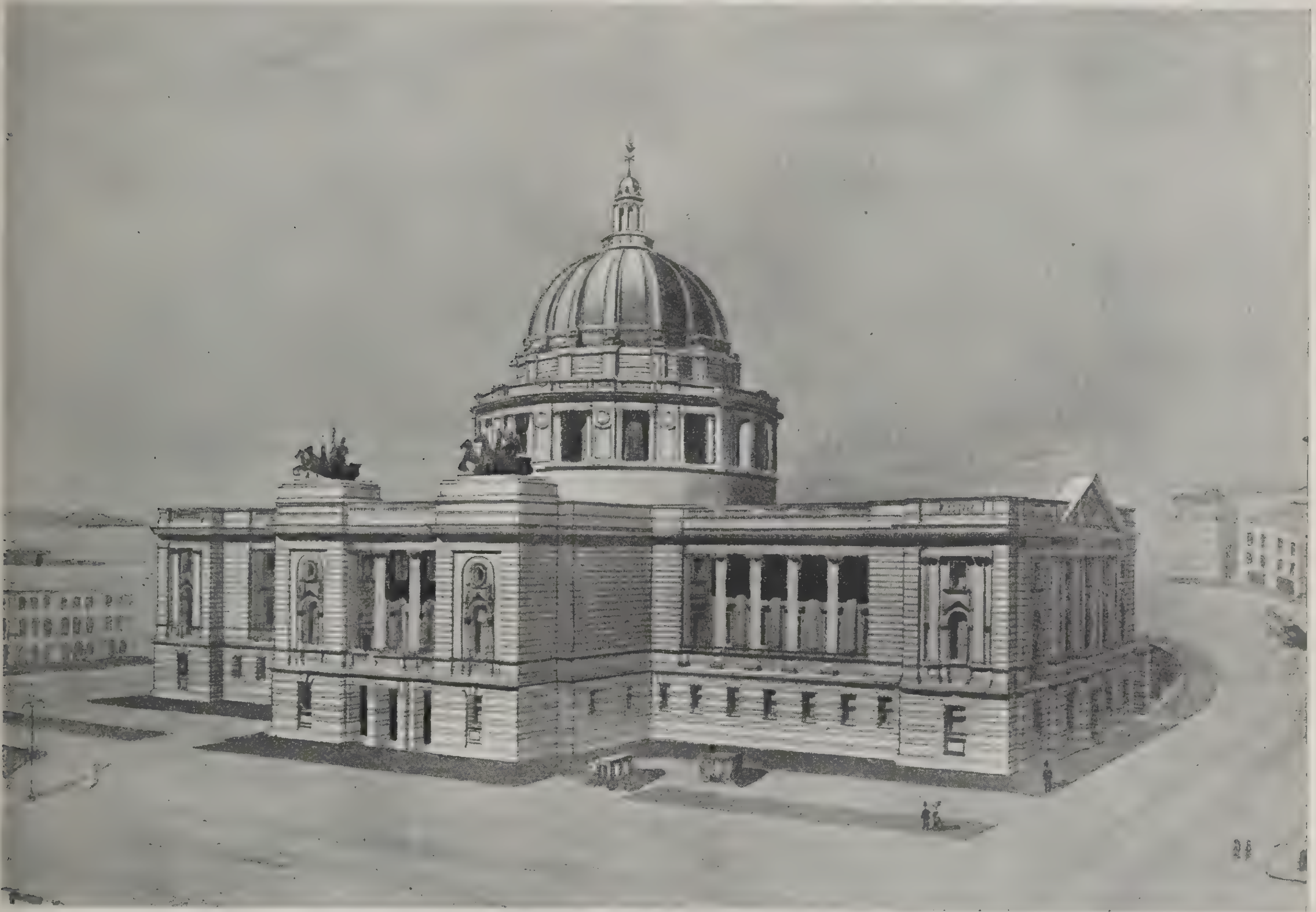
Dr. Rathgen states, in reference to
destroying of the grate of the monum
of "Eno" in the large Church of Emd
"It is true that in this case the deca
not due to gases, but to the sea w
which reached the church with a t
wave. By the change of temperat
which is caused by the sun's rays pass
through five big windows and the coo
during the nights, a constant crystallis
and re-dissolving of the sea-water s
is called forth."

"TRUTH" ON THE TREND OF DOMESTIC WORK.

The whole architecture of the British use is, says a writer in a recent issue "Truth," undergoing an almost start-ng change. In dozens of suburbs—urley, for instance—whole towns of resi-nces are springing up, each family commodated in a house more or less odelled on the old country farm idea. me of them are charming, and although e effect may be on the whole a little irri-ting when viewed from a height, it is finitely better than the effect of the Nor-ood of forty years ago, whose endless reets of grim, colourless houses still fright the Surrey hills. The new houses, o, are dotted about with much skill; the rd's-eye view reveals no dreadful rows, ile at night the effect is picturesque in e extreme. Purley lights are worth ing miles to see; ranged up the hill, they ve been compared to Gibraltar, proached by night from the sea.

Even in these modern places, however, chitecture still wants much to complete whether on the æsthetic or practical de. The occupant of an exquisite house ith glorious views told me the other day at her larder faced due west, an item ich must have increased by a good deal e cost of housekeeping during the heat ave, when it was difficult enough to keep y food at all.

A whole group of books on country uses, farms, and the principles of untry houses has recently appeared, and parently these works find ready sales. We are revolting against the "square box with holes in it and a number on the door to distinguish it" which has served us for a house so long. Round Regent's Park there are springing up here and there rather absurd red-brick baronial mansions, with an air of would-be feudalism, and there are whole streets of the houses in the familiar Willett idiom, which always seems to me to have only one weak point—the fact that the houses fairly clamour for more ground round them than can be given to them. But the absurdest of the baronial halls is better than the frozen insolence of Lancaster Gate. Like Maud, it is icely regular, splendidly null, and badly wants the saving "curve in a sensitive nose," which, after all, saved Maud's face. But Lancaster Gate houses have, perhaps, their own reasons for not indulging in nose. A modern house, whether Willett or not (they are all becoming classified as Willett), has almost too many noses sometimes, but at least it does have features, and plenty of windows to take the place of eyes, and staircases which wind and double and take rests on spacious landings, instead of going up like Jacob's ladder, and daunting the caller who has only to mount to the drawing-room.



DESIGN FOR A GUILDHALL ON OLD HAYMARKET SITE, LIVERPOOL. BY J. WATSON CABRÉ.

DESIGNS FOR A GUILDHALL.

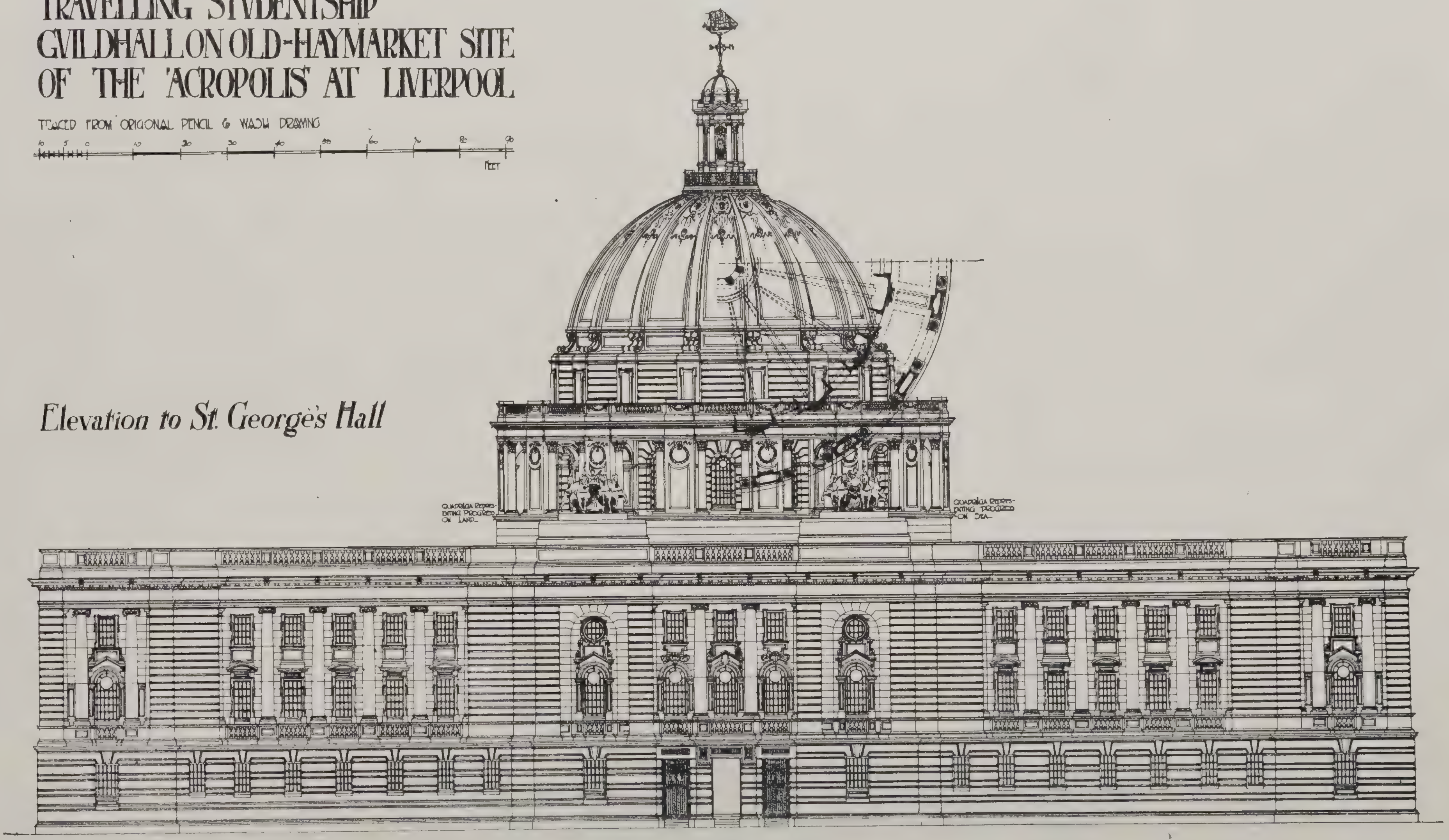
The accompanying illustrations show a design for a Guildhall placed first in competition for the Travelling Studentship of the Liverpool Architectural Society. It is by Mr. J. Watson Cabré. From the plans it will be seen that the council chamber, a circular apartment with domed ceiling, is the central feature, below which, on the lower ground floor, is placed a large luncheon room; while to right and left, in rectangular blocks, are grouped the several committee and other rooms. The treatment is an effective one, and the proportions of the exterior are well studied.

THE PROPOSED LONDON MUSEUM.

The London County Council has, on the recommendation of the Local Government Records and Museums Committee, resolved that the whole of the objects of London interest collected by the Council from time to time, including the boat of the Roman period discovered on the site of the new County Hall, should be offered on permanent loan to the trustees of the London Museum. The museum will be accommodated in the State apartments of Kensington Palace, which was placed by the King at the disposal of the trustees for the exhibition of the collections. The committee informed the Council that they understand the accommodation at Kensington Palace will be of a temporary nature, and that it is intended eventually to house the objects in a building worthy of London. A large and valuable collection has been made by the Council from time to time and a selection is exhibited at the Shepherd's Bush Exhibition. Of the remaining objects some are stored on the site of the new County Hall and at the Horniman Museum. All these might appropriately find a place in the London Museum.

LIVERPOOL ARCHITECTVRAL SOCIETY
TRAVELLING STVDENTSHIP
GVILDHALL ON OLD-HAYMARKET SITE
OF THE 'ACROPOLIS' AT LIVERPOOL

TRACED FROM ORIGONAL PENCIL & WASH DRAWING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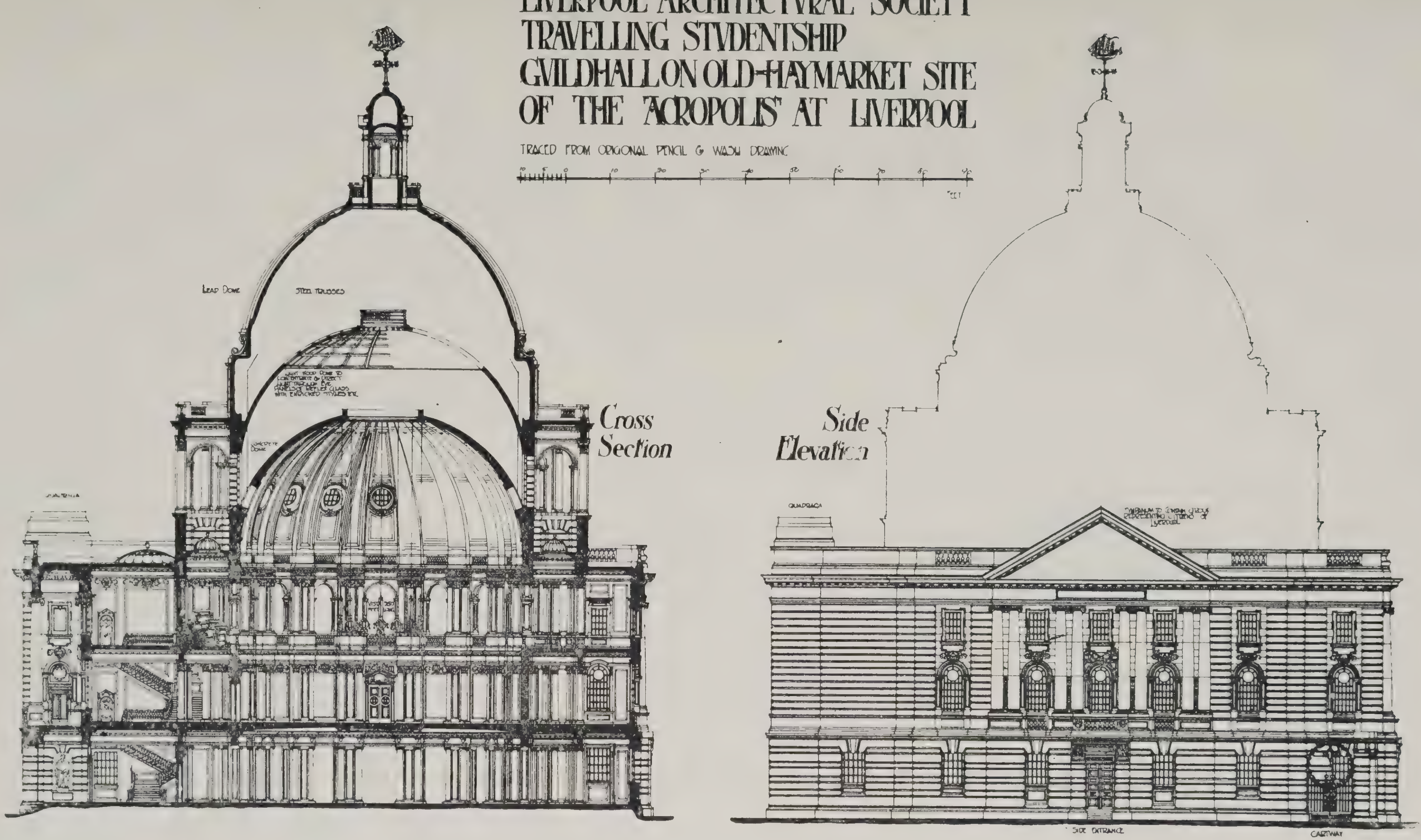
FEET
QUADRIGA REPRESENTING PROGRESS ON LAND
QUADRIGA REPRESENTING PROGRESS ON SEA

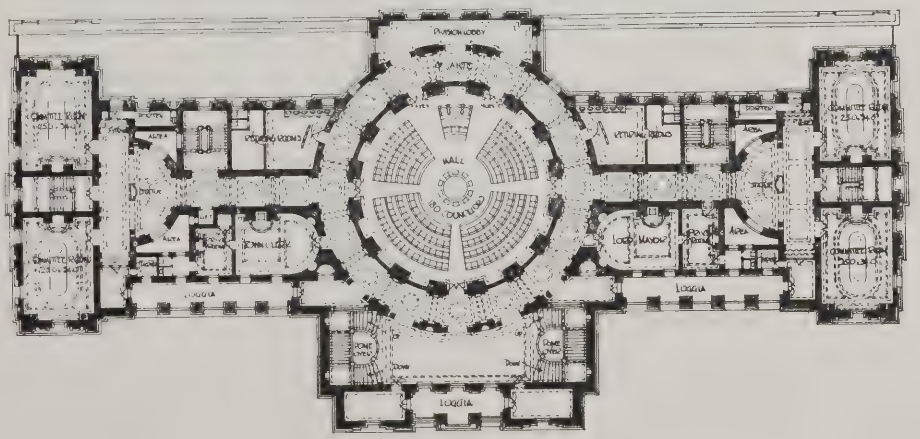
Elevation to St. George's Hall

BY J. WATSON CABRÉ.

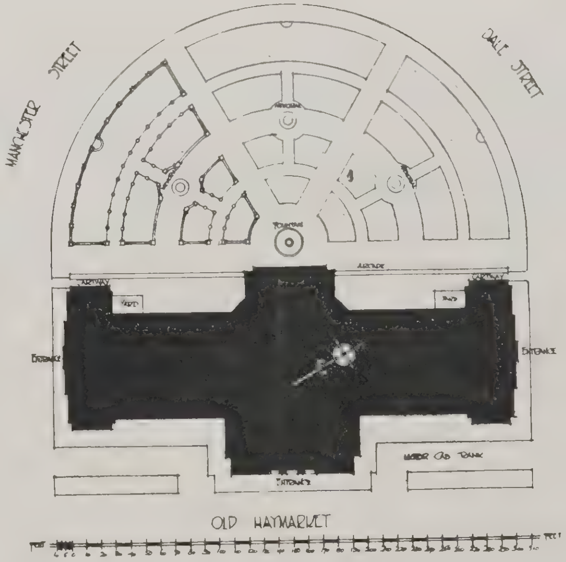

LIVERPOOL ARCHITECTVRAL SOCIETY
TRAVELLING STVDENTSHIP
GVILDHALL ON OLD-HAYMARKET SITE
OF THE 'ACROPOLIS' AT LIVERPOOL
TRACED FROM ORIGONAL PENCIL & WASH DRAWING
10 5 0 10 20 30 40 50 60 70 80 90
FEET
LEAD DOME
STEEL TRUSSES
LIGHT WOOD DOME TO CONCENTRATE OR DIRECT LIGHT THROUGH EYE PANELS OF REFLEX GLASS WITH ENRICHED STYLES ETC
CONCRETE DOME
QUADRIGA
Cross Section
Side Elevation
QUADRIGA
TYMPANUM TO CONTAIN GROUP REPRESENTING CITIZENS OF LIVERPOOL
SIDE ENTRANCE
CARTWAY

BY J. WATSON CABRÉ.

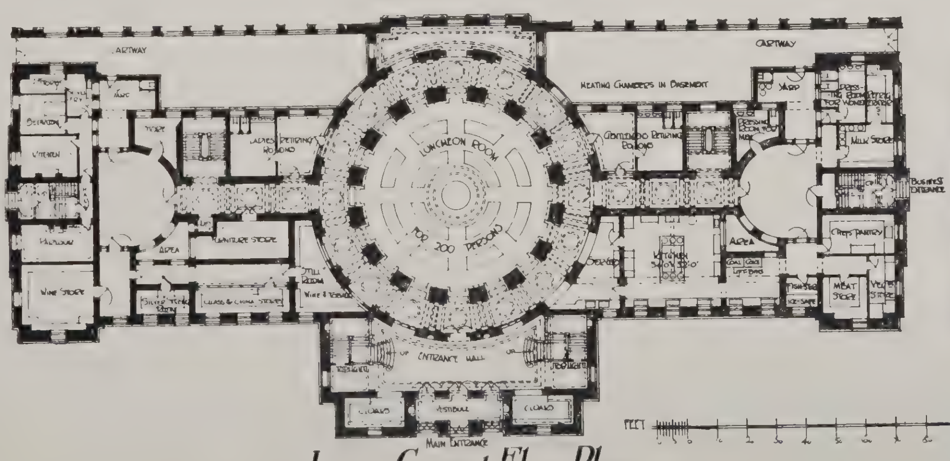
LIVERPOOL ARCHITECTVRAL SOCIETY TRAVELLING STVDENTSHIP GVILDHALL ON OLD-HAYMARKET SITE OF THE 'ACROPOLIS' AT LIVERPOOL



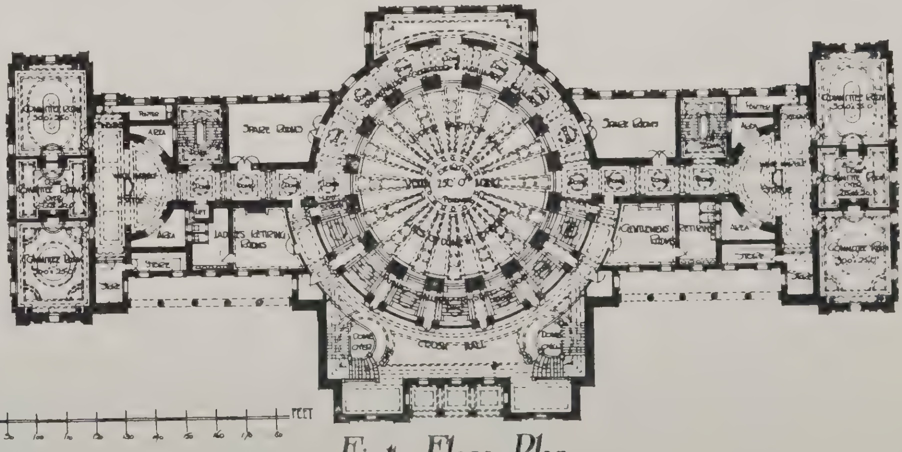
Ground Floor Plan



Block Plan



Lower Ground Floor Plan



First Floor Plan

BY J. WATSON CABRÉ.

COMPETITIONS.

"Daily Mail" Ideal House.

In the competition instituted by the 'Daily Mail" for an "ideal house" to cost from £900 to £1,100, the design submitted by Messrs. Reginald C. Fry and H. Clarke jun., of 12, Clifford's Inn, Fleet Street, E.C., has been placed first, and awarded the premium of £100. A house erected to this design will form the central feature of the "Daily Mail" Ideal Home Exhibition at Olympia in April next. The erection of the house has been undertaken by Mr. W. G. Tarrant, of Byfleet and Woking, who will have only ten days in which to carry out the work.

We understand that more than 700 designs were submitted in the competition, and that from these a selection of six was made for final consideration. Messrs. Fry and Clarke submitted six different designs, and it speaks much for their merit that three of these were among the six chosen for the final selection. The assessors were: Mrs. F. Stoop, of Byfleet: Mrs. Foster, of Woking; Mr. Edwin J. Sadgrove, F.R.I.B.A.; Mr. E. C. P. Monson, F.R.I.B.A., F.S.I.; and Mr. W. G. Tarrant.

Architecture at the Welsh National Eisteddfod.

At the Welsh National Eisteddfod recently held at Carmarthen, the following were the awards in architecture: For he best design with specification for a cottage to cost £180, William Eaton, A.R.I.B.A., Cardiff; for the best design for a public hall to seat 500 persons, Dan. Thomas, Derby; for the best sketch in black and white of any building of antiquarian interest in Wales, William Eaton, A.R.I.B.A., Cardiff. Mr. Edwin Seward, F.R.I.B.A., was the adjudicator.

The New Federal Capital for Australia.

A plaster model of the site for the proposed Federal capital city for Australia is now on view at the offices of the High Commissioner for the Commonwealth of Australia in order to assist those who may wish to take part in the competition which has been announced for designs for the building of the city. The site of the city s in the northern part of an area which has been selected for the purpose in the district of Yass Canberra, New South Wales, and is about 70 miles distant from he eastern coast-line of Australia.

The competition, which is believed to be he first to have been organized in this manner for the design of a capital city, is open to the world, and copies of the conour maps, conditions, etc., are available n Australia, New Zealand, Canada, South Africa, London, Paris, Berlin, Washington, New York, and Chicago. The premiums are £1,750, £750, and £500. The competing designs are to be in the hands of the Department of Home Affairs, Melbourne, by January 31st next, when hey will be submitted to a board consisting of an engineer, an architect, and a icensed surveyor, appointed by the Government, who will report to the Minister of Home Affairs. The decision of the Minister is to be announced in Melbourne within two months of the receipt of the designs, or as soon thereafter as may be possible.

The proposed city, says the "Times," s to be the permanent seat of government of the Commonwealth of Australia, where the Federal Government will meet, and where all Commonwealth legislation will be enacted. The plans are therefore to embody houses of parliament (for which the suggested dimensions are 600 ft. frontage and 200 ft. depth), so placed as to become a dominating feature of the city, residences for the governor-general and the prime minister, and also public offices comprising departments of the prime minister, external affairs, attorney-general, home affairs, treasury, trade and customs, defence, and postmaster-general; courts of justice, places of worship, mint, national art gallery, and library, state house, printing office, government factories, university, technical colleges, city hall, general post office, museum, central railway station, railway marshalling yards, military barracks, criminal and police courts, gaol, hospitals, national theatre, central power station, gasworks, markets, stadium, and parks and gardens. In addition areas are to be laid out within the city for commercial, residential, and industrial purposes. Provision is to be made for tramways, ornamental water, a water supply on the basis of 100 gallons per head per diem, which will be delivered from a service reservoir at an elevation of about 2,250 ft. above sea level, and sewerage and sewage works. For the purposes of the design the population is assumed to be 25,000.

Granite is said to be available in large quantities in the territory, but sandstone is not obtainable except at a distance of about 100 miles. Railway transport, however, will be provided. It is anticipated that bricks of good quality can be made locally, and there is an ample supply of material for road construction.

Commenting on the above, our contemporary the "Surveyor" observes that it is not a comic journal, otherwise allusion would need to be made first to the history of the choice of the district within which the future capital is finally to be placed. "The din of conflicting local interests, the useless picnics of inspection to proposed but impossible sites by members of the many Houses of Parliament with which the Commonwealth is afflicted, and innumerable commissions and reports, all form a sort of comic opera of ten years' duration, and costing about £15,000. Lord Rosebery recently spoke of the chief Australian sport as hunting for a capital. Now this is all over, the district has been agreed to, and the actual site within it at Canberra settled upon—a virgin one, on which the town-planner will have a free hand. . . .

"The site as shown is a square of three-mile sides, but this, of course, is only a general indication, not intended to govern the limits of the designs either in extent or shape. The former, however, is hinted at in the expectation of a population of 25,000 in the early years of the budding city. The surface is much diversified, and a prominent feature is that of a small stream, or creek, as it is called in Australia, meandering east to west, and about in the centre through the area. By damming this at one end and providing a settling tank at the other, an ornamental lake can be easily provided, and competitors who wish to make this a feature of their plan must take it into consideration in the general lay-out. Probably this would form an attractive frontage to the more important buildings, affording scope for much ingenuity in combining this with suitability of aspect. The latter has to be adjusted to climatic conditions in a latitude of 35 deg., with its generous sun and hot winds, though these can neither be called excessive at the altitude of over 1,800 ft. above sea-level. There is no doubt that we have in this competition one of the most important and interesting that has hitherto been put before town-planners. . . .

"What is the best plan? We may take it that the hideous chess-board plan almost universal in Australia at present, with the notable exception of Sydney, will not be put forward at all. The cartwheel, or spider's web, plan has many advocates, and is exemplified, among other places, at Karlsruhe in Germany, at Dalnay in Manchuria, in New Orleans, and in Washington, though in the latter the web has been broken into four or five centres, the capital and the White House being placed at the two principal ones. . . .

"It is stated by geometricians that the greatest economy in street haulage from any one spot to any other is attained by a hexagonal plan—that is to say, assuming a central open space and around it a series of six-sided figures, one outside the other, forming parallel streets, while six broad avenues radiate out from the centre, through the angles of the hexagon, to the outskirts. The humpy character of some of the surface at Canberra, and the more or less irregular margin of the ornamental water, precludes any uniform plan throughout, and perhaps in some ways it is as well from the picturesque point of view. Open spaces are specified, and we may point out that those near the centre of traffic should not adjoin the main arteries in order that they may be preserved principally for those who seek relief from the din of city traffic. . . .

"There are several other points which the competitors will have to consider, a leading one being the width of streets, in connection with which, looking to the main ones, is the question of the provision between slow and fast traffic, of cycle paths, space for tram lines, rows of trees, room for covering of the footways to protect pedestrians from sun and rain, which is a very usual feature of Australian towns in the latitude of Canberra.

"As the time allowed for sending in the designs appears to be ample, and as town planning has for the last two or three years been a leading topic, we may look to an interesting application of its principles to a concrete case."

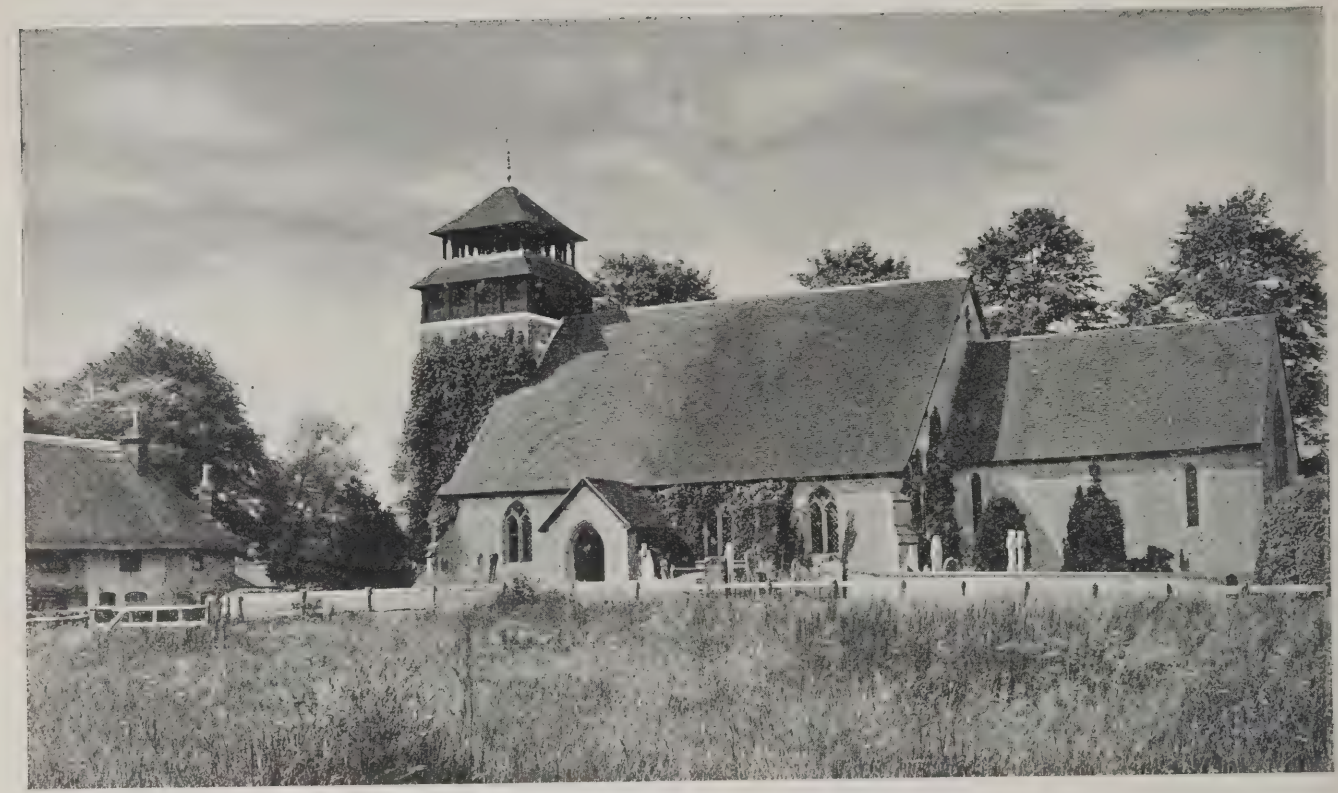
LIST OF COMPETITIONS OPEN.

September 4. School, Newcastle-on-Tyne.—Architects practising in Newcastle are invited by the Education Committee to take part in a limited competition for designs for a senior mixed school and a junior mixed school, each to accommodate 365 children. R.I.B.A. nominate assessor.

September 5. Cottage Hospital, Skegness.—The Executive Committee invite architects to submit competitive designs and estimates for the Skegness and District Proposed Cottage Hospital. Plan of site and conditions of competition will be sent to competitors on application. Building to cost £900. Premium for design placed first, £15 15s. Designs to be sent in September 5th, to Mr. W. W. Robinson, hon. secretary, Capital and Counties Bank, Skegness.

September 9. Swimming Baths, Pontefract.—The Borough Surveyor will supply particulars of this competition, which is open to architects practising in the West Riding.

September 12-25. Courts of Justice, Athens.—Competition open to foreign architects. Cost of building not to exceed £160,000. First and second pre-



Meonstoke is not far from Droxford, on the Meon Valley Railway. The church, known as St. Andrew's, though originally dedicated to St. Mary, presents a mixture of styles. The chancel is Early English, or thirteenth century, the nave is Transitional, and the tower is of fifteenth-century date with modern staging, the wooden fleche also being modern.

MEONSTOKE CHURCH, HAMPSHIRE, FROM THE SOUTH.

miums, £800 and £320. Plans, estimated costs and fee of £8 required. Particulars to be seen at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., and in the library of the R.I.B.A.

SEPTEMBER 9. PARISH HALL, FFORESTFACH.—Designs are invited for a parish hall to cost £1,200 (premium £5 5s.). Particulars may be obtained from Mr. H. Plant, 14, Fisher Street, Swansea.

SEPTEMBER 15. SCHOOL, LOWESTOFT.—Designs are invited by the Education Committee for an elementary school to accommodate 500 boys at Romanhill. Premiums: £21, £10 10s., and £5 5s.

SEPTEMBER 16. LIBRARY AND ART GALLERIES, MANCHESTER.—Limited to the ten selected competitors in the first competition.

SEPTEMBER 29. PARISH HALL, SWANSEA.—Designs are invited for a parish hall, to be erected in the Swansea district at a cost of not more than £1,200. Particulars on application to Mr. Herbert Plant, Solicitor, 14, Fisher Street, Swansea.

OCTOBER 4. HOUSES, EASINGTON.—The Easington R.D.C. invite plans for three types of houses, of which it is proposed to build 100 at Murton Colliery, Durham, in streets of 20, with 16 ft. back streets, 18 ft. frontage, and garden ground in front of each house to a depth of 30 ft.; an earth-closet and outside pantry to be provided for each house. Type A: 28 ft. gable, 3 bedrooms, 1 living-room, 1 sitting-room, scullery (offshot), with kitchen range and bath. Type B: 25 ft. gable, 3 bedrooms, 1 living-room, scullery, with kitchen range and bath. Type C: 2 bedrooms, 1 living-room, and scullery, with kitchen range and bath. The successful candidate will receive 2½ per cent. commission upon the net cost of buildings when erected. Plans must be sent to Mr. J. M. Longden, Council Offices, Easington, Castle Eden.

OCTOBER 7. BATHS EXTENSION, BARNSLEY.—Barnsley Town Council invite drawings for a proposed extension of public baths in York Street and Race Street. Premiums, £50, £30, and £20. Particulars from Borough Surveyor, Manor House, Barnsley.

OCTOBER 12. SCHOOL, COSELEY.—Designs are invited for a school to accommodate about 200 children. Particulars may be obtained from the Education Offices, Coseley, near Bilston.

OCTOBER 14. ALTERATIONS TO HOTEL, BRISTOL.—Plans are required for alterations at the Grand Hotel. Particulars may be obtained from Mr. F. A. Jenkins, 44, Corn Street, Bristol.

OCTOBER 31. NEW TOWN HALL, MARYLEBONE.—Premiums, £100, £75, and £50. Assessor, Mr. Henry T. Hare, F.R.I.B.A.

NOVEMBER 30. TECHNICAL INSTITUTE, CARDIFF.—The Cardiff Education Committee invite architects to submit competitive designs and estimates for a technical institute to be erected in Cathays Park, Cardiff. Mr. J. S. Gibson, F.R.I.B.A., has been appointed assessor. Full particulars may be obtained from John J. Jackson, Director of Education, Educational Offices, City Hall, Cardiff, on deposit of £2 2s.

NOVEMBER 30. HOSPITAL, HASTINGS.—The Joint Committee of the East Sussex Hospital and the King Edward VII. Memorial Fund invite architects to submit competitive designs, etc., for the proposed new hospital. Mr. Edwin T. Hall, F.R.I.B.A., of 54, Bedford Square, London, has been appointed assessor. Conditions and instructions may be obtained from Mr. W. M. Rhodes, East Sussex Hospital, Hastings, on deposit of £1 1s. Premiums of £125, £75, and £50 are offered.

JANUARY 29, 1912. GOVERNMENT PALACE, MONTEVIDEO.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640, and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

JANUARY 31, 1912. FEDERAL CAPITAL CITY, AUSTRALIA.—Competitive designs are invited by the Commonwealth o Australia, for the laying-out of the Federa Capital City. Premiums are offered a follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars plans, and instructions, may be obtaine at the office of the High Commissioner fo Australia, London. Designs must b delivered by January 31st, 1912, to Kin O'Malley, Minister of State for Hom Affairs, Commonwealth of Australia.

No date. INFIRMARY, ROCHDALE.—Th Board of the Rochdale Infirmary hav decided to proceed with a portion of large extension scheme to cost abou £16,000. It will include an operatin theatre, staff accommodation, ophthalmi rooms, modernised in-patients' department, and an additional twenty-four beds Provision is to be made for forty-eigh beds at a cost of not more than £17,000 The assessor appointed for the limite competition is Mr. Alexander Graham F.R.I.B.A., of London.

At a recent Local Government Boar enquiry it was stated that the new Ken County Council offices at Maidstone, wit improvements in existing buildings, woul probably cost in all about £48,000. Th contract, with which Messrs. Wallis, c Maidstone, are proceeding, is for £44,33 The architect is Mr. F. W. Ruck.

ENQUIRIES ANSWERED.

Books on Chemistry and Physics of Building Materials.

W. A. D. (Aberdeen) writes: "Kindly name a few of the best books on the chemistry and physics of building materials."

—Among the best books are the following: Munby's "Introduction to the Chemistry and Physics of Building Materials," 6s. net; Middleton's "Building Materials, their Nature, Properties, and Manufacture," 10s. net; and Mitchell's "Advanced Building Construction," 6s.; all of which are obtainable from B. T. Batsford, 94, High Holborn, W.C.

Washhouses and Steam Laundries.

W. J. P. (Somerset) writes requesting general information upon the construction and requirements of washhouses and steam laundries.

—These require extra stout roof timbers, stout walls or pilasters, if shafting is fixed; first-rate drains with plenty of inspection chambers (one to each machine is not too many), and one to each 12 ft. straight of drain at hand tables; and all the north-east or north-west light possible. A covered loading and unloading place for vans is a necessity. A 5 ft. glazed brick or tile dado at the washing place is desirable; concrete foundations are necessary for all machines, concrete floors for the washhouse, and wooden floors elsewhere. To remove steam from the washhouse, two fans are needed, one driven by the washhouse shafting and the other by the ironing-room shafting. The air supply to these fans comes from the drying chambers and ironing rooms. In winter the air is warmed by steam pipes before reaching the packing and ironing rooms. The sorting room also is warmed in the same way. The drying may be by "horses" or in a room through which hot air is moved by a fan, the spent air being sent either to the washhouse or into the open. The driving may be by steam or gas engine, or electric motor; a suction gas engine is the cheapest. As the washhouse is not always at work during the same hours as the ironing room, two engines, or fast and loose pulleys, or clutches are needed to disconnect the shafts.

As the "calenders" for ironing and drying blankets, sheets, curtains, etc., are heated by steam of from 45 to 60 lbs. pressure a steam boiler is needed, and one "economiser" to heat the water that feeds the boiler, and perhaps a second economiser to heat the water for the washing. Economisers are batteries of vertical pipes, placed in the flue between the boiler end and the chimney; the water is pumped through these pipes so as to become heated by the hot gases that leave the boiler flues. If the water is hard, it is well to collect all the rain from the roofs and to mix it with the hard water in order to lessen the scale inside the boiler. A hot sulphur spring gives good boiler water. The chimney should be from 80 to 90 ft. high, and should be plumb inside; if it is larger inside at the top, so much the better.

If it is necessary to adapt an existing two-storey building to the purpose of a laundry, a vertical steam boiler to supply the wash machines and calendars should be installed on the ground floor. Ironing and packing accommodation should be upstairs. A fan is required to ventilate gas-iron rooms. This fan may, in some cases, blow into the drying chamber, or the washhouse. If ordinary flat-irons are used, the stove has to be in a separate room or in a space bricked off from the ironing room itself. Steam boiler attendants must be males over the age of 18, according to the requirements of the Board of Trade.

If the only machines are to be gas-heated irons, the hot water can be obtained from a heating apparatus boiler, and the clothes can be boiled in cast-iron pans each with its own fire and chimney, and containing 50 or 60 gallons of water. The steam from these can be led away by hoods above to wooden shafts through the roof, each shaft having a lid which should be closed at night. The smoke can be used in some cases to heat air for the drying room and for removing steam, as also can the exhaust from gas-engines of more than 25 B.H.P.

The Act requires the provision of a meal room, separate from the work rooms, for workpeople taking meals on the premises, and also a special place for cloaks.

The foundations and walls of the boiler seat and flues must be separate from those of the building; a space of 2 ft. 6 in. between their walls is not too much. If the two join, the walls are likely to crack and to cause the roof to buckle.

INGENIOR.

Beam Over Shop Front.

PITCH PINE writes: "A 12 in. by 12 in. pitch pine beam was found to be carrying the front wall when an existing shop front was removed. The beam is in good condition, but has sagged somewhat. The load to be carried consists of the front wall, two floors, and a roof. Am I running any risk in reusing the old beam?"

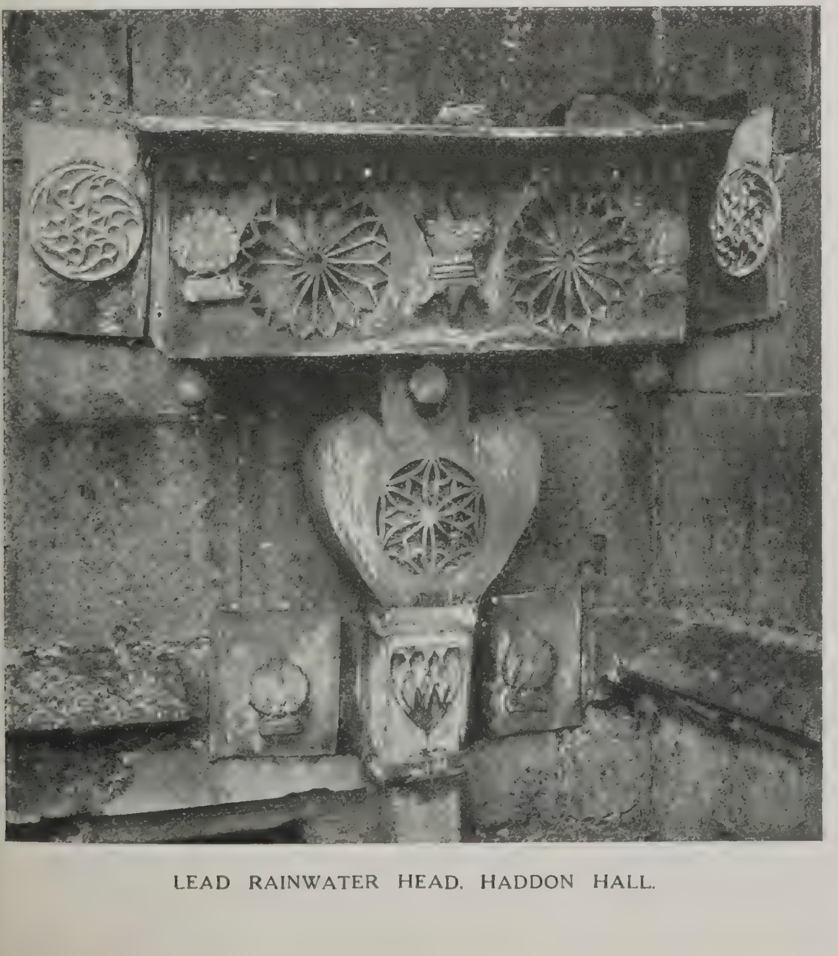
—There would be considerable risk in using the old pitch pine beam. The load from wall may be taken as 190 cwt., from roof 34 cwt., from first floor 102 cwt., from attic floor 51 cwt., all at a very low estimation, making a total of 377 cwt., while the load that the beam ought to carry should not exceed 100 cwt. The factor of safety when new probably did not exceed 2, and pitch pine is apt to get brittle with age. Any book on building construction will give the method of calculating the strength of beams, but "Examination Work in Building Construction" (Batsford, 2s. 6d. net, postage 3d.) is to be recommended.

HENRY ADAMS.

LEAD RAINWATER HEADS AT HADDON HALL.

Haddon Hall is fortunate in possessing a remarkable series of lead rainwater heads and downpipes, two of which are here illustrated. They are of singular charm, dating from the early part of the seventeenth century, when the English crafts were in a state of flux. The older traditions were still vigorously alive in all that concerned workmanship, while classical motives in decoration were beginning to find a footing. Plumbers had then, as they have to-day, a conservative reputation, and it is to this tendency we must attribute the long survival in leadwork of Gothic decoration. Stonework and woodwork much earlier succumbed to the spirit of the Renaissance, but in the examples here illustrated there is no sign of the new influence which was to change the face of English architecture.

The wheels of pierced sheet lead, like echoes of cathedral rose windows, are of a delightful delicacy. The other decorations are purely heraldic. The boar's head erased tells of the Vernons, and is reminiscent of that Dorothy Vernon whose romantic escapade has been such a blessing to equally romantic novelists; while the peacock displayed stands for the Manners



LEAD RAINWATER HEAD, HADDON HALL.

family. It was Sir John who married the enterprising Dorothy in 1567. On the pipe socket of the larger head is the coat of arms of the Montagu family, three lozenges in fesse. It was in 1628 that another Sir John Manners married Frances, daughter of Edward, Lord Montagu, so the head is dated fairly accurately by the heraldic tendencies of the plumber who made it. But for such dating, one could hardly believe that the Gothic tradition would be so vigorous a century after Henry VIII. introduced Italian workmen into England.

The smaller head is a good example of the toy castle type that was so popular at the same period, and indeed up to about 1670.

Not the least attractive feature of these products of the plumber's art is the knowledge that it was in England that both pipes and heads of lead were invented, and that nowhere abroad was such rich work done at any date. Of the hundreds of fine English examples, few equal and none excel those at Haddon Hall, which is a home of all the building arts.

THE ARTIFICIAL SEASONING OF TIMBER.

Every year increasing quantities of timber are seasoned by artificial means, and a large engineering industry has been created in response to the demand. The saving in time is enormous over that which is required for natural seasoning. Drying in kilns occupies periods ranging from three or four days to two or three weeks, while if done naturally it would occupy as many years. In fact, some of the hard woods used in the finest cabinet work and joinery are not considered suitable to be worked up under six or seven years. If kiln-dried, three weeks should suffice. But even in the latter some preliminary air-drying in log or balk or planks is thought desirable, which may last from three to six months.

Natural seasoning, says a writer in the "Times" Engineering Supplement, though so prolonged, does not yield better results than judicious artificial seasoning. In fact, it is claimed that the latter is preferable as being more thorough, and because the timber absorbs less moisture subsequently than does timber which is naturally dried.

In brief, the art of drying timber in kilns consists in removing the greater portion of the water and a portion of the organic constituents as rapidly as possible without injury to the timber itself. This is the cardinal condition and test of success. Dry warm air alone would crack the timber and twist it; the air must be heavily laden with moisture in the early stages of drying, and be dry only at the final stages.

In the most modern kilns the typical arrangement is as follows .—A long closed-in building capable of holding several thousands of cubic feet of timber, say from 20,000 ft. to 50,000 ft., has a floor laid with rails sloping gently from the end at which the timber is loaded in on trucks to the end opposite, where it is discharged. At one side of the building next the discharging end a fan draws in air over the surfaces of a steam heater, and sends it warmed into that end of the building, whence it traverses along to the loading end, passing in its course between the boards or planks, which are separated about an inch apart by narrow strips of wood laid across at intervals of about 2 ft. The moisture in the timber is taken up by the warm air first at the discharge end of the kiln, and is deposited again on the timber at the loading end. Thus the saturation of the air increases in its passage from one end to the other, and its volume, intensity of pressure, and temperature diminish also. Entering the kiln as a dry, warm current, it leaves it as a moist, cooled current. The effect on the timber is to remove moisture from the piles at the discharge end and to deposit moisture on those at the entering end; it is taken, therefore, from the timber which is driest and yielded up to the timber that is greenest. In less-pronounced degrees the same process is going on all through the length of the kiln.

LEAD RAINWATER HEAD, HADDON HALL.

In the kiln the trucks of timber are moved forwards at intervals as often as a fresh truck is loaded in, moving towards the discharging end. They are thus brought gradually under the influence of drier air less charged with moisture. The result is that the timber dries from within outwards, with the minimum of "shakes" possible, until as it arrives at the discharging end it is subjected only to currents of dry warm air.

In most kilns the air is circulated by return ducts to the heater and fan, to be used again. This arrangement economizes heat, and as the air is already laden with moisture it is valuable as a means of controlling the humidity in the kiln, particularly in hard woods, and in very green woods whether of hard or soft kinds. The regulation of this humidity is very important, perhaps even more so than the mere temperature. It is estimated by wet and dry bulb thermometers. It is so important that in the Sturtevant system a triple-duct kiln is employed, with two fans, one of which is used solely for receiving the humid air discharged from the kiln through the return duct and returning it through a regulating damper to the kiln, while the other fan supplies measured quantities of warm and of cold air, the warm directly and the cold through a by-pass, both regulated in volume by dampers into the kiln. Moreover, a modern kiln has two thermometers, one at or near each end, and an anemometer gauge.

Many kilns are heated with radiators without a fan. The radiator coils, steam-heated, are placed below the floor at the discharging end. The air heated by these rises and is drawn into the building at that end, travelling along the chamber, partly by a draught created by discharging ventilators, partly by the difference in weight of the dry air and the air when it becomes saturated by moisture from the timber. A portion may return to the coils.

The kilns just noticed are termed "progressive" kilns, and are suitable for large quantities of timber of one quality and thickness. For smaller quantities compartment kilns are used. In these the timber is loaded in either directly on the floor or on trucks, and the compartment is closed until the seasoning is accomplished, when the timber is removed. These separate charges permit small quantities of different kinds and sizes to be dried, since every kind and size require different treatment. Compartment kilns may be heated with steam radiators or with a fan and heater. Return ducts are sometimes fitted, but not so frequently as in the "progressive" kilns.

Difficulties increase with increase in thickness, so that the degree of humidity necessary, and the length of exposure to its influence, are much greater in the case of planks 3 in. thick than of boards, say, 1 in. thick, and the two could not be properly seasoned in the same chamber at at the same time. Timber which is just felled would suffer more from an attempt to force the drying than that which had been air-dried for a few months. Green timber dried immediately after being felled should be subjected to preliminary steam ing before being put into the kiln, or i this is not done the temperature of the kil should be lower than usual, and the satura tion should be greater and the period mor prolonged.

OBITUARY.

Mr. William Henry Hill, F.R.I.B.A.

Mr. William Henry Hill, senior partne in the firm of W. H. Hill and Son, archi tects and civil engineers, of South Mall Cork, who died suddenly on July 28th, a the age of 73, was himself the son of a architect of considerable reputation. M W. H. Hill was for many years Diocesa Architect to the Church of Ireland i Munster. He was the architect for the r stored Cork courthouse, and designed als the Church of Ireland Young Men's Chris tian Association building on the Sout Mall, Cork, and, in conjunction with M Evans as engineer, the sanatorium a Stream Hill. As architect to the Cor District Lunatic Asylum, he designed th additions to the building at Eglinton. H was highly esteemed for his benevolenc and public spirit, as well as for his arch tecture.

Mr. George Boxall.

Mr. George Boxall, of Hazlehurst, Pang bourne, builder and contractor, who le estate of the gross value of £24,157, which £7,783 is net personalty, gave £1 to his foreman, William Nicholls, an £100 to his trustees for distribution amon his employees

INDUSTRIAL ARBITRATION BILL: AN EXAMPLE FROM NEW SOUTH WALES.

A committee of the New South Wales aster Builders' Association appointed to nsider the Industrial Arbitration Bill, which the text was published in July st, have presented their report, which as been issued in the form of a pam- alet, of which copies have been sent to us. brief summary of the Bill may be use- il as serving to show how comparable nditions in New South Wales and in this untry are regarded by the Legislature of e former country. It may be pointed it that the Bill recently introduced by r. Will Crooks apparently embodies me of the features of the New South ales Bill. The latter Bill—conveniently amed "Mr. Beeby's Bill"—provides for e repeal of the Industrial Disputes Act, 08, the amending Acts of 1909 and 1910, d the Clerical Workers' Act 1910. It so amends certain Acts dealing with the rly closing of shops. Generally, the achinery of the Industrial Disputes Act ommonly known as Mr. Wade's) is re- ined —that is to say, wages boards are be composed as at present, with an in- strial registrar, and an arbitration court esided over by a judge. There are, how- er, numerous minor variations, and some at provoke opposition from one side or e other.

The Minister takes power to appoint the airman and members of the boards, and remove members and dissolve the ards. The procedure of the wages ards is to be altered. Respecting atters in dispute, the boards make recom- endations to the registrar, who publishes e same in the Gazette. Within fourteen ys after publication, any of the parties the proceedings may apply to the court r a rehearing. At such hearing the court ay make an award.

The registrar is to determine all appli- tions for permits for these classes, and tes of wages for such workers.

The Act provides for the establishment conciliation committees in the northern, uthern, and western colliery districts.

A special commissioner is to be pointed. Should a question arise that in s opinion may lead to a lockout or strike, e commissioner has power to call a com- lsory conference of the disputing parties. Anyone taking part in a lockout is sub- ct to a penalty of £1,000, and in a strike 50. [These items seem to suggest the urce whence Mr. Will Crooks drew his spiration for the Bill which he recently troduced into the British Parliament.] enalties for strikes shall be a charge on ages, and be recoverable by a garnishee der, the employer to be responsible for llection. A union aiding or abetting a rson on strike is liable to the extent of 20 of the fine. If the union takes part a strike, it will be liable to a penalty £1,000, but it shall be a defence to oceedings if such union proves that asonable notice had been given on its half to the Minister or Under-Secretary such intended strike, or of such condi- ns of unrest as would be likely to in- ice a strike.

The penalty for breaches of awards is 50, and the penalty for secretaries or per- ns acting on behalf of unions receiving oney except in pursuance of an order, or th the previous approval of the registrar, £20. Appeals against penalties are per- itted.

The Governors may appoint any ipendiary or police magistrate to be an dustrial magistrate.

Inspectors shall be of two classes, salaried and honorary, and shall have the power to inspect time-sheets and examine employees as to wages and hours of work. On obtaining the authority of the Minister, they may institute proceedings for a penalty under Clause 54, which provides that the registrar or an industrial magistrate may order payment by a member of a union of any fine, levy, penalty, or subscription payable in pursuance of the rules of the union. Thus these inspectors are to undertake, incidentally, the work of the unions at the public expense.

The schedule provides for the grouping of industries.

In the report on the Bill, the committee of the New South Wales Master Builders' Association express the opinion that the retention of wages boards is an acknowledgement that the Government cannot devise anything better. From a close observation of the tone and temper of those boards, the committee have come to the conclusion that their most valuable result has been the growth of a mutual toleration and friendliness between the disputants. They think, however, that a general right to appeal is likely to promote fresh trouble.

The provision in the Bill for awards to lie in the court for 14 days, during which time amendments may be made, does not appear to be an improvement, as the award still comes into force automatically on being made, and the Bill simply invites everybody to appeal against it, but only gives them a fortnight to consider whether the award will be injurious to their trade or not. Awards should be made to come into force after a period of at least three months from the time they are made, and during that period appeals might be made and settled. Any alteration in the awards should be made before they actually come into force. Such a provision would enable employers who have taken contracts under existing conditions to complete their contracts in many instances and to make provision in future contracts for the alteration in conditions that is about to come into force. The present system tends, to a large extent, to aggravate disputes from the fact that employers, being bound by their contract prices, have to pay an increase in wages or other expenditure caused by the awards out of their own pockets; so that such a provision as outlined above would prove a benefit both to employers where wages were going up, and to employees when wages were going down.

With regard to the appointment, removal of members and dissolution of boards by the Minister, it always appears difficult for Members of Parliament in office to realise that the vast majority of people like to manage their own affairs, even although they may fail to manage them as well as those who are axious to do it for them. Why the Minister should take from the parties most interested the right to nominate their representatives and the chairman does not appear. The committee do not recollect any serious complaints concerning the actions of the chairmen or members of wages boards. With past experience to go upon, the choice of chairmen for wages boards in the future, if left to the parties concerned, and failing them, to the judge of the industrial court, is bound to become more select. It is to be hoped that permanent appointments will not be made to these offices. Industrial legislation is still admittedly an experiment. Immediately permanent officials are appointed the process of solidification sets in, and the country will be saddled with the incubus of an imperfect system which will presently become hidebound by precedents made by officials whose natural interest it will be to maintain them. When industrial laws enjoy the same respect as the common law it will be soon enough to appoint permanent officials to administer them. At present it must be admitted that these laws do not command public respect, and no process of compulsion will make them respected.

A certificate by a medical man approved by the Government should be sufficient in the case of an aged and infirm worker to empower the registrar to grant a permit. With regard to slow and inexperienced workers, the committee cannot see how the registrar is to determine who is or who is not a slow and inexperienced worker. No doubt the employer, if he has one, will know, but that will not be considered proof of incapacity. Some provision should be made as regards efficiency, and a test made by some impartial person whose certificate would be sufficient authority for the registrar to act upon. On the ground of humanity a serious attempt should be made to secure a chance of employment for those mentioned in this clause. There is also no proper provision for slow and inexperienced workers in country districts to obtain permits except by coming to the registrar in Sydney.

The committee recommend that boys, youths, or men may be apprenticed at any age, and that if their indentures are to finish after the age of 21, they should be allowed to register their indentures at the registrar's office as proof of their apprenticeship. Provision should also be made for improvers, whose opportunities of learning their trade have been limited, to become efficient; reasonable precaution being taken to prevent fraud.

One of the greatest blots upon industrial legislation so far has been the stigma attached to certain penalties. The punishment does not fit the crime. The impossibility of applying penalties for breaches of the industrial law in consonance with equity has made its application in some cases appear grossly unjust. It should always be borne in mind that industrial legislation is a great social experiment; therefore breaches and misdemeanours, committed by those engaged in carrying out this experiment, should be dealt with quite differently from breaches of the criminal law, where the penalties inflicted carry with them a stigma that is approved of by the public conscience. Apart from the impossibility of sending large numbers of men to goal for taking part in a strike which they think justified, they bitterly resent that their leaders should be punished by fine and imprisonment. In like manner, employers feel a sense of injustice in being fined, with the alternative of imprisonment, for petty breaches of the industrial law, breaches which may have been inadvertently made. There are now quite a large number of employers in New South Wales who have sentences recorded against them of fine and imprisonment. It may be said that nobody thinks the worse of them for that. Well, that is bad for the law. In such cases the individual or the law must suffer in public esteem; either one or the other is brought into contempt. Either this fact, or the other fact, that strikes so far cannot be controlled by legislation, and that strikes by large bodies of men cannot be punished, has lead to a modification regarding certain of the penalties (Clause 48) in the Bill.

Perhaps, seeing the other method of enforcing penalties has failed as far as the employees are concerned, it may be well to give the "garnishee order" a trial. It might be suggested to the Minister that as this and preceding measures are experimental the suspension of certain civil rights might be tried as penalties for breaches of the industrial law, say, the right to vote for or to be eligible for the position of Aldermen or Members of Parliament. Such a form of punishment would be appropriate, seeing that party politics are so closely connected with industrial disturbances.

The idea of taking a secret ballot as to whether a strike shall take place, or be continued, or not, is a good one, provided that efficient regulations are made to see that it is properly carried out.

The grouping of industries is a natural and sensible suggestion to make at the present stage, but over-systemization should be avoided. The proposed amendment to the Bill, however, which leaves it optional to appoint a board either for an industry as outlined in the schedule, or for any section of an industry, simply goes back to where we were before.

The lawyers can come in by and by and evolve something that might be dignified by the name of law. At present it is only a makeshift business and there is a deal of re-adjustment to be done before opposite parties can be in agreement on matters of principle.

The power of ministerial interference in this Bill is too great.

The option of coming under the Bill or staying out is a weakness, but it is as well to recognise that certain large bodies of workmen are not willing at present to forego the right to strike, and that under the circumstances the offer of conciliation is the best that can be done. It would be futile to try and attain uniformity of method in the settlement of industrial disputes. At the same time there is not much inducement to other bodies to take advantage of a law which subjects them to pains and penalties while the rebels who remain without the law are free from disability.

Whatever virtue there was in the existing Act, as an educative force, in teaching the two parties concerned, the employers and employees, to consider their relationship from the other's standpoint, has been diminished.

The exaltation of the third or administrative party is a mistake. In Mr. Wade's Act the third party comprised the judge of the industrial court, the registrar and the chairmen of the wages boards. Now it includes the Minister. It has been already pointed out that the chief virtue in those boards was the unexpected spirit of conciliation which manifested itself; this spirit arose in the simplest way through opposing claims being submitted to the weight of argument, evidence, and a somewhat free and easy discussion. It may have been assisted occasionally by a pertinent question from the chairman, but its chief promoters were the two parties concerned. Moreover, any active attempt by a third party to exercise the role of conciliation would not have commended itself to either.

One would have thought that a study of the working of those wages boards would have elucidated the lines of a policy calculated to strengthen industrial legislation in the direction of those elements which had promoted compromise, satisfaction and stability on the part of the disputants. It may be taken as an axiom that if two opponents could themselves settle their disputes without the intervention of a third party it would be to the best interest of all concerned.

To those of us who had closely watched the working of these wages boards, hopeful signs were not wanting that commonsense was making headway, and that if the weightier matters in dispute, viz., hours and wages, could be adjusted by mutual agreement, industrial regulations could become much simplified and less irritating.

However, Mr. Beeby's Bill provides for the exaltation of the third party, at the expense of the other two parties. In the old Act the chairman was nominated by the employers and employees together, and, failing agreement, by the judge of the industrial court, who represented the public.

Members of the wages boards were also chosen by the parties concerned, but under the new bill the chairman and the members are chosen by the Minister. The magnifying of the political element in the administration of the Bill is distinctly calculated to darken counsel, as it could not be contended that the Minister represented more than one section of the public, that is to say, the party which put him in power.

The limitation of the power of the wages boards and the widening of the doors of the Appeal Court are in the committee's opinion retrograde steps.

Another principle of this Bill which should be strongly opposed is that of absolute preference to unionists. This will cause very serious hardship. It will mean that a man who is not a member of a union cannot get employment, or if he does get employment his employer will be fined and have to either discharge the man or see that he joins the Union.

Engine drivers and firemen and unskilled workers are each provided with a separate board. This should not be. Neither of these sections of employees constitutes an industry: they should be dealt with by the boards appointed for the different industries to which they may be attached.

The committee also consider that it may be necessary to provide for separate boards for country districts, as city members of boards who are engaged in their industries in Sydney, either as employers or employees, find it most inconvenient to travel over the country taking evidence, and in many cases their want of knowledge of country conditions tends to the making of unworkable and harassing awards. After the awards are made they should be publicly notified throughout the country prior to coming into force, so that parties affected might have a chance to appeal in case of injustice.

Conclusions.

Generally speaking, the existing Act has worked about as satisfactorily as any of this experimental legislation could be expected to do. It has satisfied large numbers of employees who at first objected to the Act before they understood it thoroughly. The unions have since rushed in and got registered, and applied for boards, and these boards have given awards which have in a large majority of instances been accepted as a satisfactory compromise by both parties. Both employers and employees have just about got used to the provisions of the Act and the machinery for bringing those provisions into operation, and the Government seems to have chosen the psychological moment when the great majority of those interested have become accustomed to and contented to work under the Act, to repeal it and bring in something new which is bound to cause dissatisfaction either on one side or the other and possibly on both.

This report, which is signed by Mr. A. E. Boroughs (President) and Mr. N. Phelps Richards (Secretary), was adopted at a general meeting of the Association on July 18th.

MISCELLANEOUS.

We are informed that a marriage wi shortly take place between Mr. H. Cresswell, F.R.I.B.A., past president the Architectural Association, and Mi Mollie Adams, a daughter of the la Judge Adams, of Limerick, Ireland.

The Montefiore Home for Incurabl and Chronic Diseases, New York, is to rebuilt at a cost of a million dollars.

With regard to proposed alterations the chapel of Chelsea Hospital—one the least changed of Wren's interiors—tl chaplain has promised to show the pla to the Society for the Protection of Ancie Buildings before proceeding with tl work.

Some of the rural schools of Irela seem to be of a quite superlative degr of badness. At the Royal Institute Public Health, Dr. Starkie, Resident Co missioner of National Education in I land, speaking of some of the schools Donegal, said that “some of these hol for sheer horror could not be equalled any part of Europe in which he h travelled.”

The Carnegie Dunfermline Truste have been granted a warrant for the molition of buildings in Bath Street, al the erection of a women's institute on site. For the institute, which is to c about £8,000, plans are to be selected af competition.

At the public enquiry, held at Aberge, with reference to the proposed establi ment by the South Manchester Board Guardians of a sanatorium for consum tives near Abergele, there was very stro opposition to the project, a large num of witnesses giving evidence against it.

Parliament Street was flooded betw 4 and 5 o'clock one morning recen owing to the bursting of a large wa main opposite the Education Office. T cause of the flood was the bursting of 30 in. trunk water main which conne Battersea with Islington. The water cut off with all promptitude, and prompt manner in which the burst dealt with by the police and the Wa Board prevented any serious dam being done.

The contract for the extension of tramway depot, Whitmore Street, H ley, Birmingham, for the Corporation Birmingham (Messrs. Martin Martin architects), has been secured Mr. T. Johnson, of Great Brook St and Willis Street, Birmingham.

Helensburgh Town Council have agr to the proposal for building a esplanade. The amount of foreshore claimed will be about three acres. estimated cost of the scheme will be ab £5,000.

Marylebone Borough Council hav decided that no basement in the boro shall be used for sleeping purposes the surface of the floor is more than below the surface of the road,” it is be vehemently protested that so drastic undiscriminating a decision would h a most serious effect on the owners house property.

One of the many inconvenient effect the great dock strike in London wa serious hindrance of building operati It was reported that several jobs stopped, and in a large number of cases fifty per cent. of the labour was pensed with, for want of materials, which there was a plentiful supply at dockside, but none of it could be tr ported to the places where it was requi

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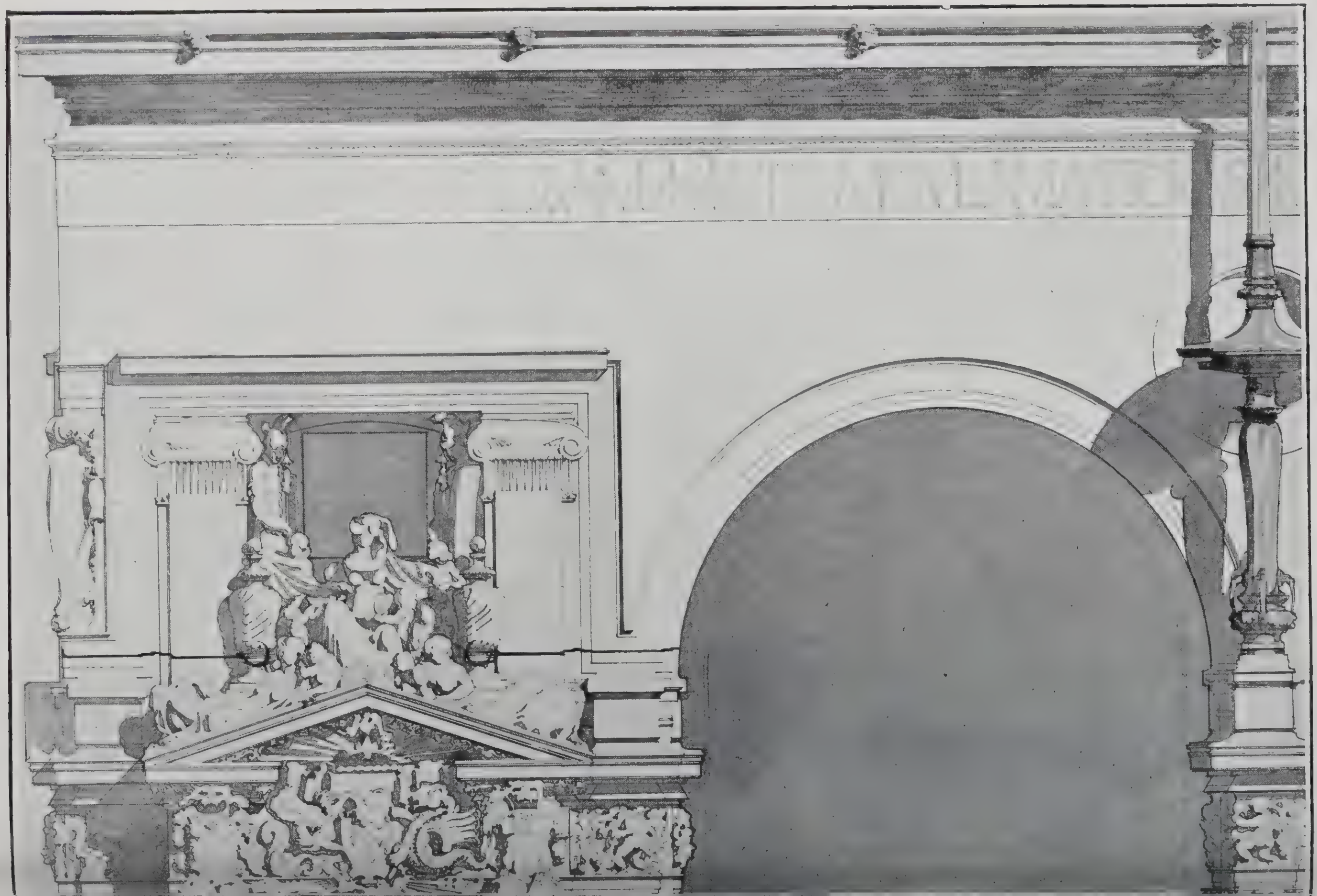

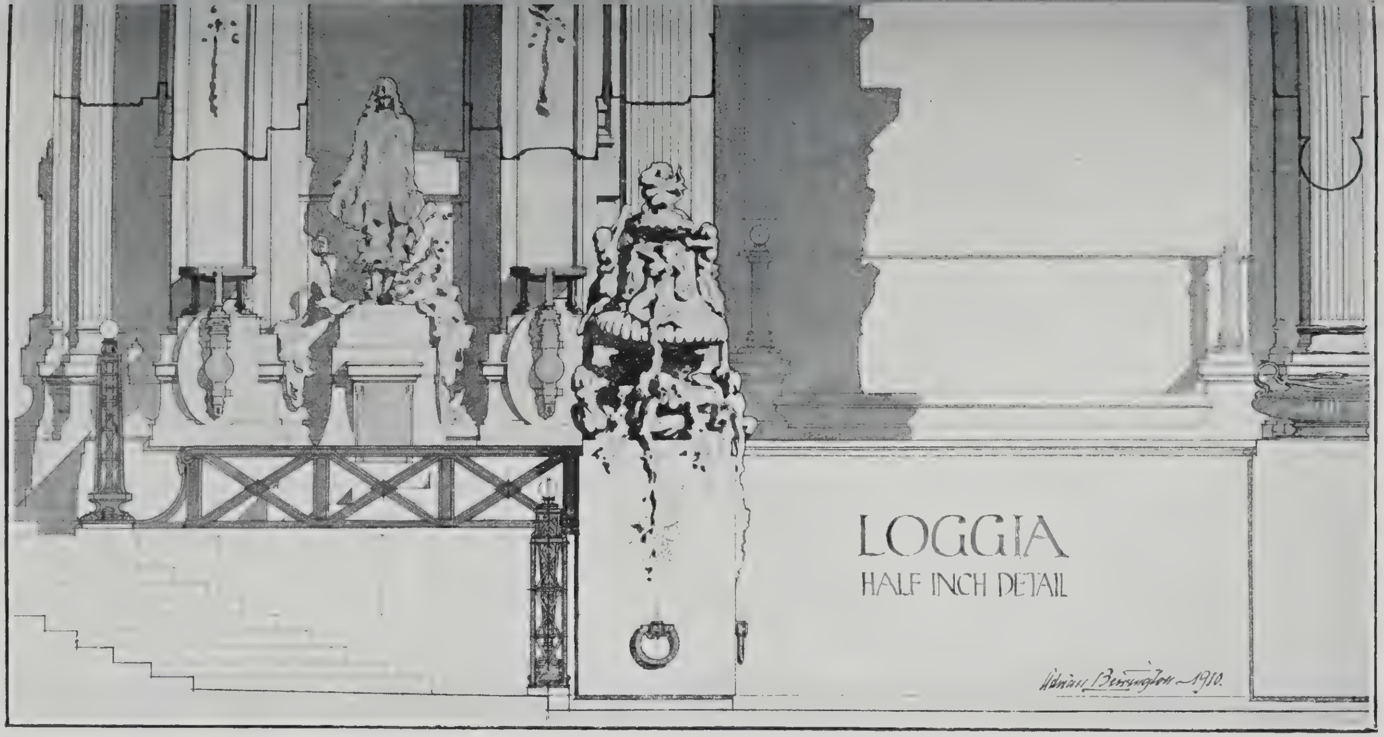

DESIGN FOR A LOGGIA IN A PUBLIC GARDEN. BY ADRIAN BERRINGTON.

(Royal Academy Exhibition, 1911)

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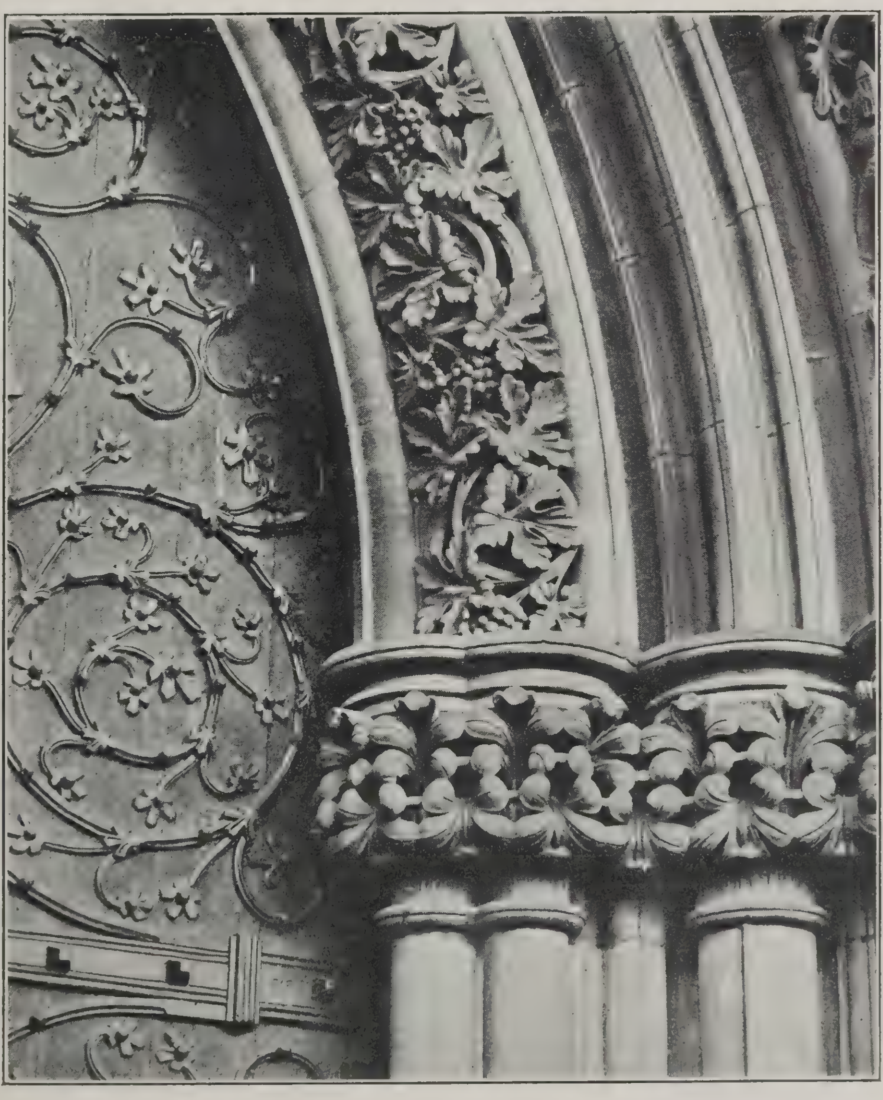
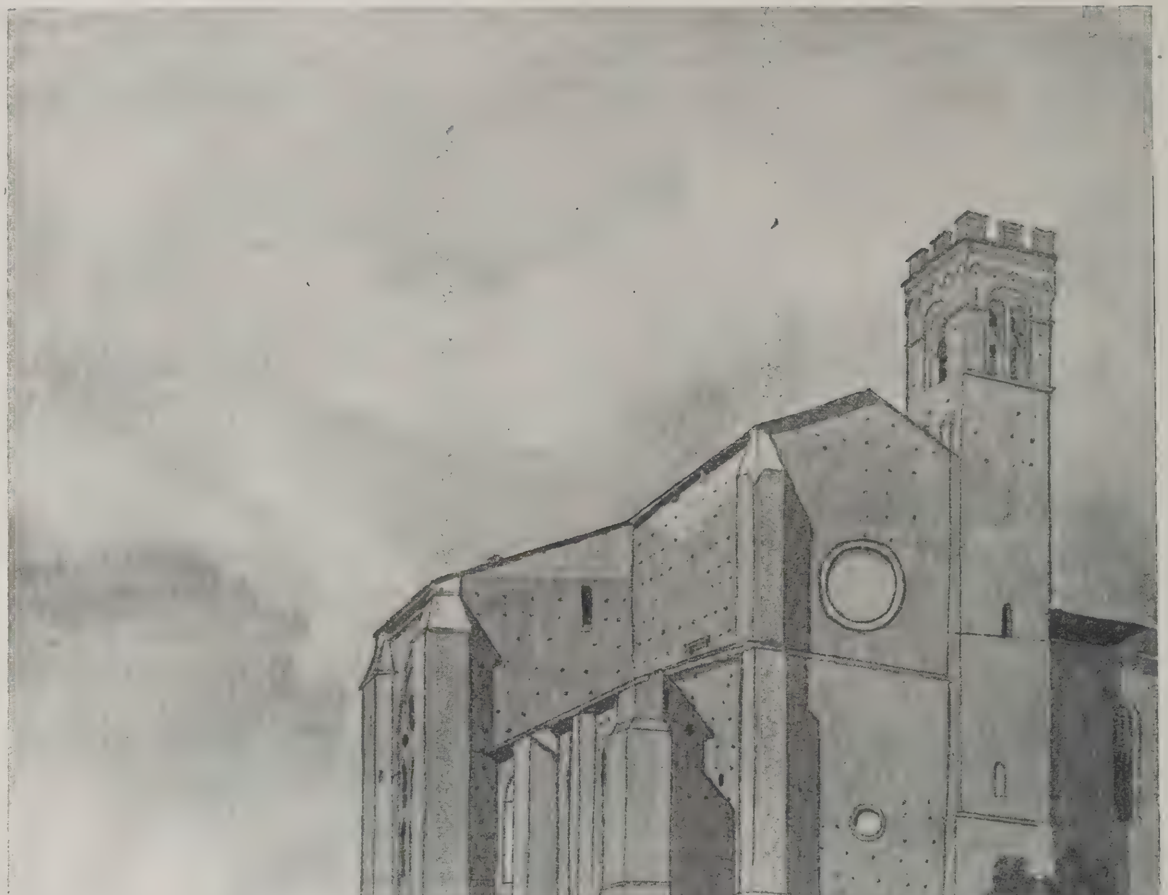
THE ARCHITECTS' & BUILDERS' JOURNAL.

WEDNESDAY, SEPTEMBER 13th, 1911.

Volume XXXIV. No. 868.



DETAIL OF STONE CARVING ON WEST FRONT OF LICHFIELD CATHEDRAL



DRAWN BY ROBERT ATKINSON, A.R.I.B.A.

THE ARCHITECTS' &
BUILDERS' JOURNAL.

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NOTE: The List of Contents will be found on page IV. of the front advertisements.

What the Royal Academy Ought to Do.

IN noticing recently the Report of a Special Committee on the Royal College of Art, we commented on the evidence given as to the total indifference of English manufacturers and their customers to the standard of applied art design cultivated at South Kensington, with an implied oubt as to whether this was the fault of South Kensington r producing the wrong thing, or of the trades and their istomers for not wanting the right thing. But we are inclined think that most of the fault is with the public. In the aining at the art schools there may be an insufficient knowdge of the actual conditions of manufacture, which renders me of their applied art design unpractical; but it is probable at in a general way the public do not want the best kind of esign, in great measure because they do not know that it is e best. It rests mainly with the public, the purchasers, ecause if they demanded the best class of design the manucturers would soon discover that there was artistic ability nough in the country to furnish it. But the standard of ste is really set by a public mainly composed of that large ass of persons who tell you—"I know nothing about art, ut I know what I like," though in general they are quite nable to give any reason why they like one design better than nother.

The subject seems to be in the air at present; it is returned in a letter from Mr. Powell, of the Whitefriars Glass Vorks, in Friday's *Times*. He says, truly enough, that the ublic generally does not discriminate between good and bad t, but seems to conclude, rather illogically, that even if the ublic possessed the power of discrimination, "it is necessarily ebarred from exercising any direct influence on the manucturer." He goes on to explain that the ordinary manufacurer receives his orders from the shops in which his goods e sold, "and the buyers for the shops and stores dictate the andard of modern industrial art." Just so; but they buy order what their experience tells them the public want. f the public wanted something better the buyers for the shops ould very soon find that they would have to procure it.

But the point in Mr. Powell's letter that chiefly struck us as his rather half-hearted suggestion that the Royal Academy ight do something to create a public recognition of applied t by setting apart a room or two in each of their Winter xhibitions for selected specimens of modern applied art, and recalls the fact (which is unquestionable) of the greatly ided interest of one of the winter exhibitions, some years ago, om the inclusion of a collection of old silver-work in what generally known as "the Water-colour Gallery." But that not going nearly far enough. Why is such a scheme to be rried out only in the Winter Exhibition, which is essentially d professedly a loan exhibition? Mr. Powell quotes the ample of the Paris Salon, where there is every year a conderable space devoted to works of applied art, the section Art Décoratif" occupying 32 pages of this year's catalogue. ut that is not in a winter loan exhibition; it is in the annual exhibition of new work produced specially for acceptance as such by the jury. To produce a parallel to that the Royal Academy ought to devote a space for new work in applied art in each of its annual May exhibitions. The Winter Exhibition is not the occasion for it. Applied art ought to be recognised there, no doubt, but that should be, like the contents of the picture galleries, a loan exhibition of old work. What we have a right to expect, and ought to have, is a room for works of applied art in each of the annual exhibitions, where works would be exhibited which, like the pictures, had been passed and accepted by the Hanging Committee as up to their standard of merit.

If any readers think that this would be too drastic an innovation to be reasonably expected, the answer is that the unreasonableness consists not in proposing it now, but in the fact that it has never yet been thought worth consideration, as far as one knows, by the Academy; at all events it has never been put in action. To recognise applied art is a manifest duty of the Academy, implied in its own official title. It is called "The Royal Academy of Arts." It is not, in fact, an Academy "of arts," it is an Academy of painting, with a little sculpture and architecture thrown in, and very inadequately exhibited. And if it be asked why this is, it will probably be safe to conclude that it is to a great degree a matter of pounds, shillings, and pence. An eminent member of the Academy, in reply to an appeal made to him to encourage the recognition of industrial and applied art in the annual exhibitions, replied significantly—"We *live* by pictures"; i.e., painting is supposed to be the popular art, and the one which draws the shillings at the turnstile, and it would therefore be bad policy to curtail in any way the space given to painting.

As to the policy, we have a word to say just now. Leaving that for the present, is the Royal Academy doing its duty to art, fulfilling its proper ends, under the present system? We will admit that the intellectual interest of sculpture and painting is higher than that of any applied art can be; those two arts can appeal to our feelings, to our poetic associations, in a sense in which no mere decorative design can affect us. And certainly sculpture is not over-represented at the Academy; the space for it in fact is very inadequate, and it is not advantageously seen; everything in the way of space is sacrificed to painting. Even the present small room for architectural designs was only grudgingly granted after many years of complaint on the part of architects. Now there are undoubtedly a good many good pictures to be seen every year at the Academy; occasionally some exceptionally fine ones. But it is the fact that there are a considerable number every year which, though up to a good standard of technique (for the Academy has always maintained that, at all events), are of not the slightest value to any educated person who has a serious interest in art. Some of them may interest the less educated public because they illustrate some popular social or historical subject; that is a harmless kind of interest enough, but is the Royal Academy of Arts the place to indulge it? These mediocre pictures occupy a large space every year, and do no good, except possibly to assist their authors to make a living. But is the Royal Academy of Arts established for that either?

What ought to be done is this. The space devoted to pictures should be materially reduced. That devoted to sculpture should be increased. There may not be each year more sculpture worth exhibiting than is now exhibited, but it requires more space to be seen to advantage. It would not be too much to add the large room to the sculpture department, making that and the octagon and the lecture-room a series of sculpture-rooms *en suite*. The present water-colour room, which is fairly large and with a wide floor space, should become the architectural room, for drawings and models—the latter to be encouraged more than they are. The present architectural room should be regularly devoted to applied art—jewellery, silversmiths' work, book-bindings, etc. There would not be too much space for them there, but such work is usually on a small scale, and it would at all events be a beginning. If all the rest, after this, were left for pictures, it would surely be as large a proportion of an exhibition "of arts" as pictures are entitled to claim. The Black and White Room might retain its present use, only it is much to be desired that in future more encouragement should be given to original work in black and white, instead of the space being almost entirely occupied by mere reproductions.

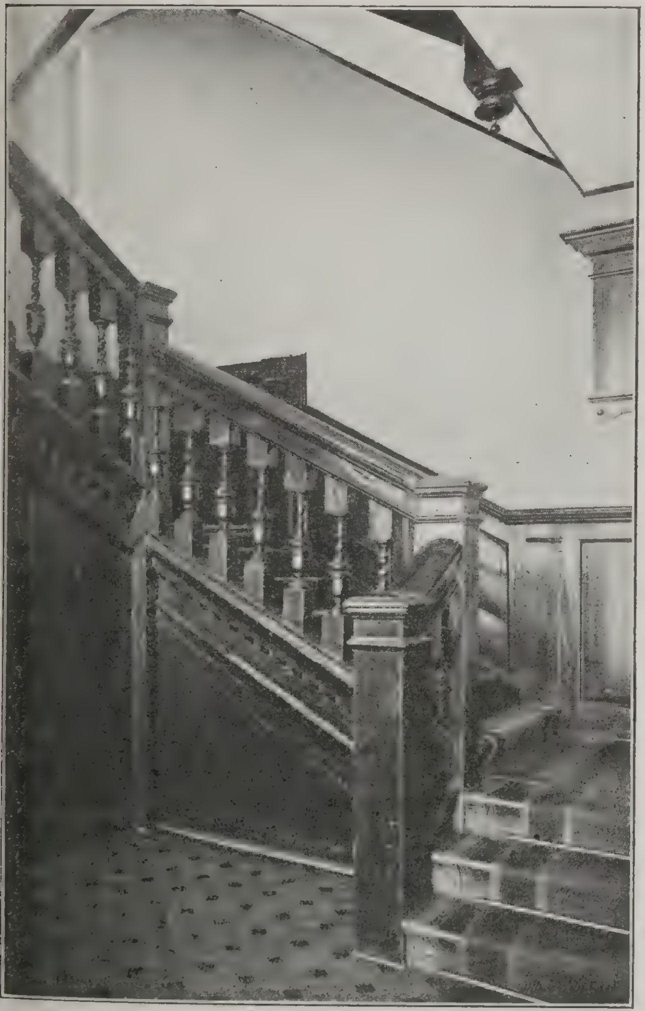
One effect that the establishment of a regular representation of applied art in the annual Royal Academy exhibitions would probably have would be this, that the public might gradually come to learn that the production of high-class design of this kind can only be the work of artists, not of trading firms; the Academy will only recognise and exhibit the work of the actual artist, under his own name; they will not accept designs which are sent under the name of firms trading in art-work. The public might then in time discover, especially if their ideas were assisted by enlightened criticism, that certain artists in applied art, who were given an honourable place in the Academy exhibitions, were worth more than others, and would go to them for designs, just as people now go for portraits to painters whose work has been awarded the best place in the annual exhibitions. We know of one case where the members of a family occupying a high social position joined to present a great piece of plate to a nobleman on the occasion of an important anniversary. But, under the existing want of knowledge on these subjects, they merely commissioned a trading art firm to provide the presentation plate, and got what had a bullion value no doubt, but absolutely no artistic value. Had the Academy been in the habit of exhibiting work of this kind, and giving the most prominent place to the best work, people would probably have found this out; they would have discovered that there were men who were recognised artists in silversmith's work, and that it was worth while to commission such artists, instead of going to a shop where so-called art was sold as a commercial transaction. The Royal Academy may still bring about this much-needed reform if they will only recognise applied art as an element in their annual exhibitions.

We referred above to the idea of the policy of the Academy in giving the chief place to painting as being the most popular art. But it is a question whether the best policy may not now lie in the opposite direction. The general (and more or less ignorant) public are not the only people whom it is important to please, although they are the most numerous. There are also the more educated public and the art-critics, some of whom at any rate have a keen enough insight into what is right and wrong in art. And it is notorious that with the better educated amateurs of art the Academy is not at present viewed very favourably. With a great deal of the annual grumbling directed against it, we have little sympathy; much of it is mere parrot-talk, repeated by rote and as a kind of habit; and when all is said there is no doubt that the best sculpture and painting of each year is to be found at Burlington House. But everyone feels that there is a great deal of painting exhibited which is not of the best, and which does no real good to art or to the artistic education of the nation. If the Royal Academy would wake up to this fact; if they would curtail the space allotted to mediocre painting; if they would realise that, as an "Academy of Arts," it is their mission to recognise and improve all forms of art, applied art as well as painting and sculpture, and to give them all a place in the annual exhibitions, we believe that the move would do more than anything else to silence their critics, and to maintain their place and influence as the leading art establishment of the kingdom.

Machinery and Art Work.

THIS subject is touched upon in a very sensible letter in the *Times* of Thursday last by Mr. Selwyn Image, the Slade Professor at Oxford. In regard to the question of "the production of beautiful things by machinery," Professor Image has no hesitation in affirming that the most beautiful things cannot be produced by machinery in a wholesale manner; but he shows a much more tolerant spirit than most art-critics in admitting that, though the most beautiful things are beyond the grasp of machinery, experience proves that some beautiful things are not, that they are actually turned out by machinery in a satisfactory manner; and it would, he thinks, be affectation to deny this. Therefore, he argues, to ride the high horse and say that because machinery cannot give us the best we will have no truck with it nor attempt to guide it aright, and to distinguish between those things which can and those which cannot be produced by machinery, is a spirit that does harm to art by creating round it "an atmosphere of repellent exclusiveness and unreality." That is the common sense of the matter, and is the true criticism to make on the undertakings that have been made by some enthusiasts to set up manufactories from which machinery shall be banished and every detail produced by hand; a kind of undertaking which must end by proving itself to be, under the present condition of things, commercially unworkable. People will not pay a fancy price for hand-made mouldings when they can get them run cheaper and more clean and perfect by steam. The anti-machinists will no doubt argue that this very sharpness and perfection is a defect, and that the slight unevenness of the hand-made work is preferable. This is a mere kind of superstition. A moulding is essentially a continuous run of modelled surface of a certain section; its continuity should be as perfect as possible, and to insist on working it by hand is merely to do imperfectly, and at a much greater cost of time and money, what a machine can do perfectly.

Professor Image did not attempt in his letter to define the kind of work which could and could not be satisfactorily produced by machinery. We may endeavour to supplement his letter in this respect. The distinction is not a difficult one to draw. None of that kind of ornament can be produced by machinery which, if drawn, would be what is characterised as free-hand drawing. Even if some design in carved work is supposed to be symmetrical on each side of a centre line, it is not a machine that will do that kind of repetition; it wants the touch of the hand, and there is the varying contour of surfaces also which no machine can give. We may take it therefore that machines for producing anything that comes under the definition of carving are an illusion, whatever profession their patentees may make; and we have no doubt Professor Image would be of the same mind. But ornament which consists in the mechanical repetition of a very simple element—which is merely a repeating ornament, may be suitably and effectively produced by machinery. It has been argued against this that in such repeating ornament the slight inaccuracies of the hand are an additional interest; it has even been asserted that Greek carvers of such things as the egg-and-dart ornament in a cornice purposely varied the touch a little and intended to avoid complete uniformity. We do not believe it. An ornament is either a repeating ornament or not; if it is, its perfection consists in its being an exact repetition, and a Greek mason who carved so many feet run of egg-and-dart intended it to be so, and made it as nearly so as the nperfections of the human hand would permit. If the epetition can be made absolute'y perfect by machinery, it is ie better for that, not the worse; and moreover, the carver is elieved from a rather monotonous and uninteresting piece of isk-work. The same principle applies in such things as rinted textiles and wallpapers with repeating patterns. The attern itself which forms the element of the design is not iechanically produced, it is drawn by hand; it is the symietrical repetition in succeeding spaces which is the mechanical ork. That is the general principle; machinery can assist in ie production of repetition of simple elements, but in ornaiental work it cannot do more than this. Multiple reproducons in terra-cotta ought not to simulate carving; in panels f a simple pattern that will produce its principal effect by epetition they are well enough. Wrought iron can of course ave no commerce with machinery; it is free-hand (or freeool) work, and its power of varied detail is its special iaracteristic. Cast-iron ornamental work, as in railings, is ssentially work of mechanical repetition, and is perfectly egitimate as such, provided that it does not attempt anything iore elaborate than can be properly and effectively expressed i the material. The mistake in so much of the Victorian caston work which gave it its vulgarity of effect lay in the fact iat a class of ornament was attempted in it which could not eally have been carried out satisfactorily except in forged or ammered work. And it should be remembered also that rnament which is to produce its effect by sheer repetition iould not be, so to speak, too good for its purpose. Repeatig ornament is a secondary branch of ornamental work; a ighly elaborated piece of design is rather degraded by being reduced to a repeating ornament; moreover, the effect of repetition is best with simple elements, and in such work mechanical production may be suitably and economically employed, without any injury to art.



Special interest is given to this illustration in view of the rumoured alterations to the Apothecaries' Hall and the surrounding old-world area.

TAIRCASE IN THE APOTHECARIES' HALL, WATER LANE, LONDON; E.C.

Designs for Stage Scenery.

MR. GORDON CRAIG'S designs and models for stage scenery for "Macbeth" and other plays, on view at the Leicester Galleries, shows a good deal of genius for stage effect and for the designing of scenery to assist and emphasise the poetic impression of a scene, though he seems a little inclined to magnify the office of the scene-painter at the expense of that of the actor. He has a very fine sense, however, of the value of spaciousness of effect, as seen in No. 1, the castle of Macbeth, with its succession of great rude square towers seen in perspective; and he makes some sarcastic remarks as to the difficulty of getting space enough for such effects in London theatres, where "stage carpenters are convinced that space is a thing that does not exist." He is quite right in endeavouring to give to the buildings in the "Macbeth" scenes an appearance of great and rude antiquity; this properly belongs to the weird nature of the play. The finest thing to be seen is the model of the interior, where Lady Macbeth is waiting the result of the murder; a dark central hall from which radiate three passages, the centre one, opposite the spectator, leading to the dark winding staircase up which Macbeth has disappeared, while at the far end of the left-hand passage stands Lady Macbeth, lighted by the one light in the scene. Such a scene must add greatly to the effect of the situation in the play. The whole series shows a great deal of thought and ability, though in some of the scenes the attempt at giving the effect of great scale is carried to an exaggerated extent.

Cleopatra's Needle.

WE see that suggestions are being made in the Press that Cleopatra's Needle should be removed from its present position and placed on some site where it would have more effect. There is no doubt that the position on the Embankment is perfectly unmeaning; it is central with nothing and there is no possible reason to urge in its favour; but the centre of Oxford Circus, which we have seen suggested, is absurd; the area is far too small for such an erection. It should be the centre of a very large open space, like the Obelisk on the Place de la Concorde, or the culminating point of a long vista. It is no use to talk of removing it from its present position until we can settle on a really more effective one; but the matter is worth consideration. How would it do in front of the British Museum? There would be a certain appropriateness in the position in one sense, at all events.

A Discovery in Architectural Biography.

IN the *Architectural Review* for September, Mr. Harry Sirr, F.R.I.B.A., gives an account of Thomas Ivory, an architect who, though eminent enough in the eighteenth century, and the designer of no less a building than the Bluecoat Hospital at Oxmantown, Dublin, is nevertheless a practically unknown man at the present time. The account therefore, with its illustrations from an old volume in the British Museum, is in the nature of a "discovery."

Thomas Ivory, says Mr. Sirr, was a native of Cork and a man of great practical knowledge. He served his apprenticeship as a carpenter and completed his time in Dublin. He was considered to be an excellent workman. An ingenious turn led him to follow gunstock-making for the Ordnance, under Alderman Truelock, then chief gun-maker. He determined to pursue the study of architecture, and became acquainted with Bell Mires, who taught drawing. By close application he soon eclipsed his master, and was considered to be the best architectural draughtsman in Dublin. He became drawing-master to the Royal Dublin Society, and here Martin Archer Shee, afterwards President of the Royal Academy, was one of his pupils. Ivory was likewise appointed surveyor of the Revenue buildings, and held the two positions at the time of his death in 1786, at the age of 54. He had little or no opportunity of studying antique work; apparently he was never able to go abroad, and by what means he acquired his knowledge is unrecorded. His name is not mentioned in the "Dictionary of National Biography."

It is on record that he came forward with competitive designs on every occasion. He competed for the Dublin Royal Exchange, and was indebted to the exhibition which followed for considerable improvement in his style of drawing. It is also believed that he submitted designs for Newgate and the Four Courts. He built a bridge at Lismore and a few private houses in the country. In addition, he designed and carried out Newcomen House, opposite the Castle gates in Dublin, and as his chief work, the Bluecoat Hospital, which compares very favourably with much contemporary work.

In the competition for the Dublin Royal Exchange he was the only architect who submitted two designs. Sir William Chambers was coaxed by Lord Charlemont to compete, but Chambers excused himself, suggesting that the premiums were not sufficiently tempting. Sixty-one designs were submitted in February, 1769. Thomas Cooley, of London, gained the first premium, £100; James Gandon, of London, the second premium, £60; and Thomas Sandby, of London, the third premium, £40. Ivory and a few Irish architects were rewarded with pieces of plate.

In the same issue of the *Review* Mr. R. Phené Spiers deals with the alterations made to Burlington House, Piccadilly, by Lord Burlington and Lord George Cavendish, and furnishes a great deal of fresh information in the light of a fairly complete set of plans which were found in the basement of the Royal Academy about a year ago. Mr. Alfred W. Clapham traces the origin of the domestic hall, while among other features are illustrated articles on Groote Schuur and some old houses in Bristol. Current architecture is strongly represented, including a special series of photographs of the Eton Memorial (Mr. Laurence K. Hall and Mr. Sidney K. Greenslade, architects), the Thistle Chapel, Edinburgh (Sir R. S. Lorimer, architect), a Paris hospital by M. Rochet, and a fine American library by Mr. Clipston Sturgis.

Tricks of the Trade.

ARCHITECTS, we always thought, were men of keen perception and clerks of works the acutest of observers; and we believed, too, that in matters connected with building the pursuit of honesty was followed for its own sake, without any ulterior motive of reward, as the old maxim would imply. Yet here is Mr. William Wright with a whole world of disillusionment. "I have worked on many jobs in my time," he says in a letter to the "Lincolnshire Echo," "and it has often been very amusing to me to see how architects and clerks of works have been gulled. A man is appointed clerk. He may be a joiner, or bricklayer, or mason, or architect's clerk, or in any other branch. He may know the theory of the work, but it is utterly impossible to know the practical part of all branches, or the quality of the wood, paint, stone, or lead, etc. He may be very clever at his own trade, but he is bound to be deceived in some of the others, however clever he is." Then follows the precise exposure: "A builder contracts for a job. He cuts everything as fine as he can to secure the job. He has only the plan and specifications to work or estimate from. The details of some of the work are only given him as the work progresses, when, to his sorrow, he finds a lot more work than he bargained for. So to curtail expenses he will slip all he can, and be out of pocket at the finish. He cannot do the job to be a credit to himself or the party he is working for. But the clerk and architect are not out of pocket. They get paid. I know a painter who had to take several kettles of paint off the job because it was not of the quality specified—not enough lead in it, or inferior lead. He took it home, emptied the kettles, got some sheet lead, struck a circle with compasses, the same size as the kettle bottom, clipped them out, inserted them in the bottom of the kettle, filled the kettle with paint again, and took them back. The clerk was well satisfied when he felt the weight. He acknowledged it was far better lead.

"An architect sent some heavy timber from a church on account of large knots. The timber was taken to the builder's yard, the knots painted over, and then grained to match the other part. It was taken back again, and the roof put on. It is there to this day. The architect acknowledged it was better stuff!

"Another builder had a roof condemned because it was Swedish timber, instead of Memel, according to specifications. It was taken off the job, laid out four or five days in a blazing hot sun, turned over every day until it became quite brown. It was put on. The architect was quite pleased, and said, 'That looks more like Memel.'

"Another was a painter who had to paint a room a certain colour according to pattern sheet supplied by the architect. There were about 20 different colours on the sheet. The one that was ticked he had to work from. He could not get the proper shade. He got it very near, but it did not satisfy the architect, so with a fine brush he painted the pattern shee with the same paint, submitted it to the architect, who said 'You've got it at last.' This will give some idea how architects and clerks are deceived." What a world we live in

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Life in "The Suburb."

THE Hampstead Garden Suburb now contains about thousand houses, with a population of between fou and five thousand. It is to grow during the next fe years until 25,000 people will be living there of all classe and at all rents, from six shillings a week to £150 a yea The greater part of this development will be carried out b the Hampstead Tenants' Societies, a branch of that c partnership system which is now doing similar work at severa places in England—Derwentwater, Ealing, Hampstead, Ha borne (near Birmingham), Letchworth, Leicester, Liverpoo Manchester, Sealand (Chester), Sevenoaks, Stoke-on-Tren Wolverhampton, and Worcester.

The co-partnership system is not the garden city system, bu is a development of it. Co-partnership flourishes best i garden cities, and it is that movement which has provided th necessary impetus. Every householder under the Hampstea Tenants' Societies, whether at six shillings a week or sixt must be on the co-partnership basis, and subscribe his minimu share before he can take a house.

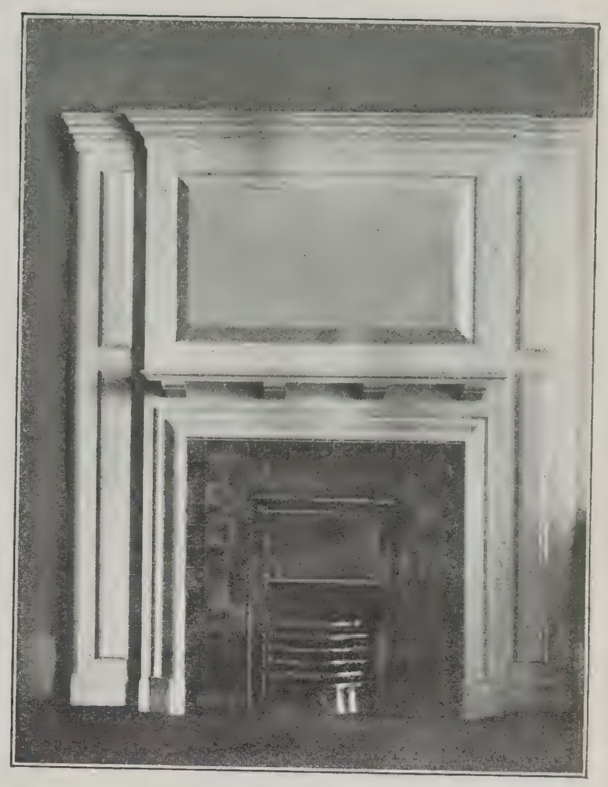
The chief characteristic of the dwellers in the Hampstea Garden Suburb, says a breezy writer in the "Standard, seems to be an infinite pity and compassion for those who c not dwell there. Those who live in "the suburb" could n now imagine what life would be like outside it. You, th stranger, come from that great world where identities are los where the individual is swallowed up in a waste of house Here in "the suburb" everybody knows everybody else, or any rate that is the theory. It is a city walled round from th outside world like a town of the Middle Ages; the bounda wall, in fact, is constructed in mediæval style. Inside th peaceful haven you all meet at the excellent club-house ne the village green and play tennis or billiards, or drink te There can be no superiority here, as the privilege of belongi to the club with its reading, writing, billiard, concert, a ladies' rooms, only costs twopence a week. But this deligh ful equality does not exist throughout "the suburb"; it cou not be so where some houses are 6s. a week and others £3. But the workman in his modest cottage has as much opportunity of playing tennis as his more wealthy neighbours, and that is a great deal.

Among its dwellers almost every trade of London is represented. There are shoemakers, shoesmiths, postmen, gardeners, ordinary clerks, bank clerks (the distinction is carefully made), writers, solicitors, architects, doctors, and so on up the scale until the prosperous City man is reached who inhabits a £150 a year house. There is a musician from a London theatre, who arrives home in the early hours of the morning and tends his vegetable garden all day, with a wealth of hair blowing in the breeze. And, to mention idiosyncrasies and not occupations would make an even larger list. There are Socialists, Fabians, Communists, Suffragists, anti-vivisectionists, and people who are "anti" everything else. Every possible "movement" is represented. There are a great many serious people in the Hampstead Garden Suburb; ladies, for instance, who wear pince-nez and a severe expression, and who think that the height of dissipation is to dine in Soho with young men who wear loose ties. "Arty" people abound. There are painters, musicians, and sculptors by the score. But "the suburb" is by no means a "cranky" place, although the artistic temperament is rampant. There is a very solid element of business people who know a good place to live in when they see it, and who do not bother with the artistic temperament, and so keep Utopia steady.

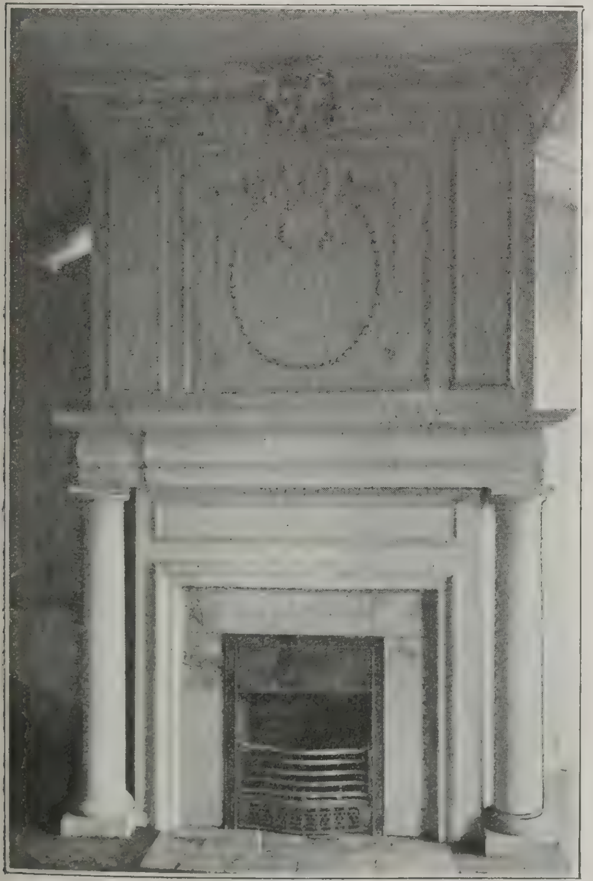
The Excavation of the Roman Forum.

THE International Archæological Congress, held last year in Cairo, will next year take place in Rome. Commendatore Boni has been invited to preside over the Topographical Section, and is now preparing a full report of the work that has been done in the Forum during the last 12 years as a practical illustration of topography based on excavation. This report will be accompanied by a full collection of documents, plans, drawings, and photographs, and will contain the results of more recent excavations, and new conclusions upon older excavations, which have not yet been published.

The most extensive of the more recent excavations have been those carried out on the site of the Basilica Aemilia, between the Temple of Antoninus and Faustina and the Curia. Hitherto little has been known of the Basilica save through drawings made by artists of the Renaissance of those portions of the façade which were still standing in the fifteenth and sixteenth centuries. With the help of these drawings it has been possible to identify fragments of carved stone, scattered widely all over the Forum, as having belonged originally to the portico of the Basilica, where they formed part of the Doric entablature decorated with triglyphs and alternate bucrania, and round shields in the intervening metopes. All other remains of the building behind the portico were buried some 27 ft. deep under ground upon which a number of modern houses had been erected. Five of these houses were bought some years ago by Mr. Lionel Phillips, who presented them to the Italian Government for the purpose of exploring their sites. They have now been pulled down, and the earth upon which they stood has been cleared away to the old level, or rather to as near the old level of the Basilica as has been possible. These excavations have revealed the actual base of the portico, which ran parallel with the Via Sacra, and a large portion of the great central nave behind it.



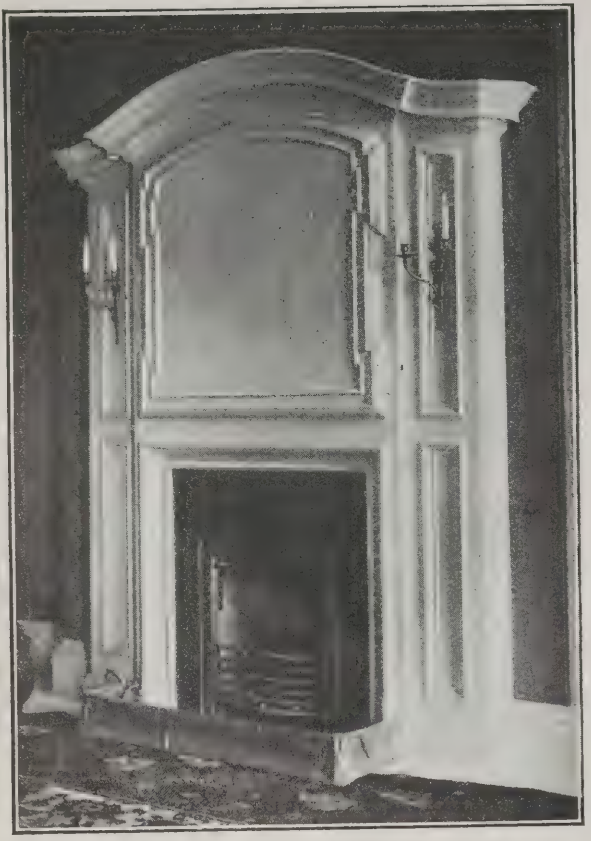
H. BULKELEY CRESWELL, F.R.I.B.A., ARCHITECT.



H. BULKELEY CRESWELL, F.R.I.B.A., ARCHITECT.

Some Modern Chimneypieces.

THE design of a chimneypiece is one of the most attractive things that come in the ordinary run of an architect's practice. There are very few problems to solve in connection with it, and the designer is left free to indulge his fancy in a way which is not generally possible. This applies particularly to those chimneypieces which are somewhat unpretentious in character—plain surfaces relieved by mouldings, pilasters, and other projections, and embellished with a little carving here and a little applied ornament there. At first sight the task seems an extremely simple one, yet the number of designs which fail to satisfy the eye are clearly against any such supposition. In this matter there is perhaps nothing which is so important a factor as proportion. How frequently



H. BULKELEY CRESWELL, F.R.I.B.A., ARCHITECT.

one sees a chimneypiece with a top-heavy overmantel, with shelf brackets of too clumsy a type, or with panel mouldings of too gross a section. To secure a satisfying result indeed the nicest sense of proportion is required, and a feeling for ornament which neither overloads the design nor leaves it too bare. In this connection the four chimneypieces designed by Mr. Bulkeley Creswell, here reproduced, may well be studied. They are eminently appropriate in treatment and at once proclaim the hand of a cultured designer; and if they recall Renaissance and Georgian models, that is a condition of affairs eminently to be desired at a time when there is no little dearth of good design in architectural fittings.

Where the Building Trade is Busy.

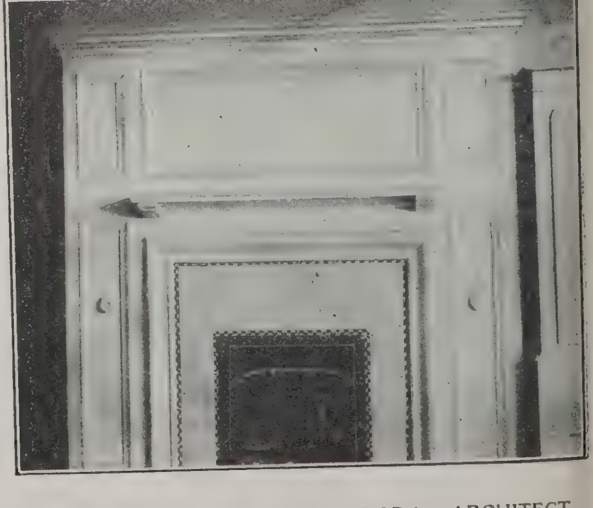
IN Vienna the builders' demands upon the banks for credit to undertake new building enterprises have been so great this year that the institutions which usually meet the requirements of the building trade have felt themselves bound to restrict credits. A master-builder to the Municipality, Herr Adolf Zwerina, describes the situation as follows:—The activity in the building trade was very brisk last year, but this year it has been extraordinarily so. The cause has been the general rise in rents and the circumstance that a number of old edifices, which hitherto, either on account of their site or configuration, could not have been converted to other uses at a profit, have now been taken in hand for reconstruction with a prospect of making money by them. The result of this unusual activity in the trade is a perceptible scarcity of labour. I myself could employ 50 workmen at present, and can only get 30. Another result is a big demand made upon the Money Market for building loans. As experience shows that by far the greater part of the private building works are financed by foreign money, it could have been foreseen that the sources of money for credit and mortgage loans could not have always preserved a steady flow. And as there is a great deal of building going on in the provinces, the provincial savings banks, which used to finance a deal of real property every year in Vienna, will not be able to do as much now as they have been in the habit of doing. . . There can be no question of any unsound building speculation going on, so that, even if the banks do restrict their building loans, no very striking result will be brought about. There are three institutes in Vienna which alone advance by way of building and mortgage loans as much as £1,000,000 every year. Taking the cost of construction of an average building as £8,000, with a 30 per cent. margin for the loan on the value of the property, something like 200 houses can be built. The activity in the trade will extend to next year as well. A suspension of the activity could only take place if money failed to become easy between this and then.

Herr Zwerina draws attention to the rising cost of structural material being something of a hindrance to building enterprise in Vienna, but his remarks just quoted seem to indicate that building sites will be in good request for some time to come.

Commemorative Tablets.

THE fixing of a tablet by the London County Council on No. 17, Red Lion Square to commemorate the residence there of Dante Gabriel Rossetti, Burne-Jones, and William Morris, brings up to about 120 the number of London houses which are so distinguished in memory of notable men who have lived there. Some of them, as in this case, bear more than one name, and the tablet, for instance, placed at No. 54, Bloomsbury Square, by the Duke of Bedford, records the residence of three Earls of Chesterfield. The tablets are not all, as the case just quoted shows, placed in position by the London County Council. Up to 1901 this interesting work was chiefly carried out by the Society of Arts, but in that yea the Council, on the recommendation of the Historical Records and Buildings Committee, decided to undertake the work and since that time most of the tablets have been placed b the care of the Council. After the Society of Arts and th London County Council, the Duke of Bedford has been th most active force in this work. Besides the tablet to th Earls of Chesterfield he has commemorated Topham and Lad Beauclerk at 101-2, Great Russell Street, Isaac d'Israeli a 6, Bloomsbury Square, David Garrick at 5, Adelphi Terrace Sir Thomas Lawrence at 65, Russell Square, William Murray Earl of Mansfield, at 28-9, Bloomsbury Square, and Si Samuel Romilly at 54, Gower Street. The Duke of Wes minster has erected two tablets, and others have been give by various societies and by private subscription.

The latest tablets put up by the London County Counci besides the one to the three Pre-Raphaelites in Red Li Square, are to Lord John Russell in Chelsea Place, and Dickens at 13, Johnson Street, Somers Town, which latt makes the third to Dickens in London, the other two being 48, Doughty Street, Mecklenburgh Square, and No. 1, Devo shire Terrace, Marylebone Road.



H. BULKELEY CRESWELL, F.R.I.B.A., ARCHITECT.

MAGAZINES AND REVIEWS.

The *Art Journal*, which, as before observed, is now paying special attention to applied art, commences with an article by Mr. Lenygon on "Gilt Leather Rooms," that is, wall-coverings, with a series of fine illustrations of this very rich and sumptuous form of wall decoration. It seems to have been more especially a Spanish and Dutch form of wall-hanging. It was imported from Flanders into England, but does not seem to have become an English industry. Of the examples given the Spanish one is the finest. The advantage of this form of decoration is that it secures the richness of surface texture given by flock papers without their insanitary quality as dust-holders, as it is easily washable, and is hard in surface. "Interiors of English Mansions" gives some fine furniture and fireplaces from Boughton. "An Artist at Abbotsford" is an article accompanied by some fine illustrations of Scott's house and its surroundings, which may revive interest in a place which has been a good deal forgotten of late years.

Two interesting forms of art are the subject of articles and illustrations in the *Burlington Magazine*—"Ancient Chinese Bronze Mirrors," by Kimpei Takuechi, and "Lacquer Work in England," by Mr. Herbert Cescinsky. Mr. P. M. Turner has an article on the picture in the National Gallery entitled "A Galliot in a Gale," attributed to Cotman; an attribution which it appears has always been questioned by Cotmanites. We agree with Mr. Turner that the composition and style are not like Cotman; the picture is rather theatrical, the last epithet that could in general be applied to Cotman's work.

The *Architectural Record* (New York) publishes this month a Pittsburgh number, written by Mr. Montgomery Schuyler, with a number of illustrations. It is to some extent historical, recounting the building of Pittsburgh. A good deal of the history is of great interest, in a general rather than an architectural way, for its site was a point in dispute in the early campaigns between French and English, and it is named after the English statesman to whom it was mainly owing that the continent was to become English-American and not French. However, our interest here is with the architecture, not with the political history. The Allegheny County Soldiers' Memorial, which forms the frontispiece (Messrs. Palmer and Hornbostel, architects) is a great classical erection, the design of which appears to be based on what is known or conjectured of the design of the Mausoleum at Halicarnassus; the architects must at all events have had that in their minds. There is a quarter of high buildings ("group of skyscrapers") of the usual type, and a birds-eye view of the "Design for Municipal Centre" (we decline to spell it "center") proposed by the Pittsburgh Chapter, with radiating streets and an enormous tower in the centre; we should doubt if this will be carried out. The Allegheny Court House is a specimen of H. H. Richardson's work, rather *passe* from the present day point of view. The Carnegie Library has a fine and dignified classic staircase. The chapter on the churches shows a curious medley of architectural ideals; the "Mary S. Brown Memorial Church" is like a very weak piece of late English Gothic, while the Presbyterian churches seem to favour the ideals of Richardson—rough and massive walling and round-beaded windows, with an immense square block of building in the centre of a crossplan, and a pyramidal roof over it; four of these Presbyterian churches are illustrated, and this seems the dominant motive in all of them. The domestic architecture is the least interesting section of the illustrations, except in regard to the plans; the exterior treatment is rather character-less.

In the *Nineteenth Century* Mr. E. Beresford Chancellor writes a long and excellent article on "Architectural Masterpieces of London." His object is to draw the attention of the general reader to the amount of fine architecture which is about us in London, unnoticed and unknown, at least as to its architects; and he suggests that an examination as to the knowledge which Londoners in general have in regard to the principal buildings would have rather surprising results. Everyone knows that St. Paul's is by Wren, but is there much knowledge on the subject beyond that? He quotes the experience of an artist who mentioned Inigo Jones, in conversation with "an intelligent man," and received the answer "Who was Inigo Jones?" And, indeed, it may be questioned whether many Londoners of average education know anything about him. We rather fancy the writer has made one mistake himself, however, when he says "the beautiful ecclesiastical work of Pearson and Bodley, Bentley and Butterfield, and Seddon, is round us on all sides, but who can point to the churches they raised?" We suspect that where he wrote "Seddon" he was thinking of "Sedding," whose work as a church-builder is much more prominent in London than Seddon's. Generally speaking, however, the article shows both knowledge and critical perception, as evidenced for instance in the well-deserved praise he gives to Vardy for his work on Spencer House, one of the best and one of the least known bits of late Renaissance in London. It seems almost amusing to have the question asked: "How many could say that Barry built the Houses of Parliament and the Reform Club?" but we believe there are numbers of well-educated people who do not know in the least; not to speak of the Travellers' Club (the work that first brought Barry into notice) and Bridgewater House, which are not mentioned. The article may do good in getting its readers to think a little more about London architecture.

In *Scribner*, under "The Field of Art," Mr. Montgomery Schuyler makes some good remarks on "Stray Statues" in American cities. Satirising the uncouth realistic statues to various men of commercial fame alone, he thinks that on the whole neither England nor America can afford to laugh at each other in this matter. Still, we are improving in statues, and we take it that America is improving also. But the point with which the article concludes (and we entirely concur) is that it is no use determining to put up a statue to an eminent man unless you have first an effective site to put it on. New York, he considers, has debarred herself from the chance of this by adopting the grid-iron street plan in its entirety; hence there is no open place of which a statue can form the centre or the culmination. Any memorial statues erected in New York must form part of a building; there is no other place for them. This, however, Mr. Schuyler thinks, might be a good thing, if it resulted in the association of sculpture with architecture becoming habitual and obligatory, instead of tentative and exceptional. There is something to be said for that view of the case.

The *Century* gives two photographic reproductions from a model of Rome in the middle of the fourth century, made by M. Bigot, a French student who gained the Prix de Rome in 1902. It is usual for an architectural student at the Villa Medici to make a restoration of some important Greek or Roman building, and M. Bigot conceived the project of combining the various restorations that had been made, in a model of Imperial Rome in the time of Constantine. We presume the model, like other work of the Villa Medici students, becomes the property of the French Government, and will be included in one of its artistic collections.

CORRESPONDENCE.

Hints to Users of "Polished Granite."

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Our attention has been directed to the very practical "Hints to Users of Polished Granite," by Mr. P. W. Abbott, published in your issue of July 26th last.

These hints are so very much to the point that we should like to emphasize one or two of them.

The equipment and resources of the granite trade have been brought to such a degree of excellence in recent years that there need not be the slightest difficulty in getting delivery of the work in the required time, if only the order be given out at a reasonably early date. There is no doubt, however, that the placing of the granite contract is frequently postponed until the last moment, and then the manufacturer is asked to rush delivery in such a way that it is impossible to turn out the work in a satisfactory manner.

Most of the principal granites now in use are held at Aberdeen in large stocks but there are some exceptions, and as a matter of simple precaution the architect is advised, before specifying any particular material, to enquire whether that particular specification can be procured from stock.

Price for price, granite is unquestionably the noblest and most enduring material for exterior building work that the world possesses; impervious as it is to the effects of weather, atmosphere, or acids; and the rapidly extending use of granite all over the United Kingdom is the best proof that architects generally are becoming more and more fully alive to this fact.

Yours faithfully,
For the Douglas Granite Company, Ltd.
WALTER E. REYNOLDS,
Secretary.

Aberdeen.

Design for a Guildhall.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Your last issue came upon me rather in the nature of a shock. To have a nearly six-year old effort in a transitional stage of modern Classic resuscitated in your Journal, with all reference to its date obliterated, leads to some confusion. I have already been congratulated by some to whom it was new; another thought I was doing better "stuff" years ago.

Someone deserves congratulation on the clever removal of the heavy type, MCMVI, from the headings to the drawings. In justice therefore to the victim you will, I have no doubt, include this explanation in your correspondence column.

Yours faithfully,
J. WATSON CABRE.

Liverpool.

[We would remind Mr. Cabré, in connection with this design, that "Age cannot wither nor custom stale her infinite variety"! The blocks in question were among our stock, and, never having been published before, it was thought they might be used at any appropriate opportunity. The two remaining illustrations of the set submitted are given in this issue. They could not be included last week owing to pressure of space.—EDS. A. and B. J.]

COMPETITIONS.

A Monumental Staircase.

Three premiums, £120, £60 and £20, were offered in the competition, limited to local architects, for a design for a monumental staircase to the Saint Charles Station, Marseilles. The successful architects were MM. Sénès and Arnal, in whose design the line of the Boulevard d' Athènes is taken as central axis, the architectural treatment including symbolical groups, lions and candelabra to gain the necessary effect.

Burns Memorial, Galashiels.

In the competition for a Burns memorial at Galashiels thirteen sculptors sent in over thirty designs or models in wax. After careful consideration the Committee reduced the list to a short leet of five, and finally approved provisionally the design of Mr. F. W. Doyle Jones, of Chelsea. The selected design comprises a bust of Burns, about 3 ft. 3 ins. high, cast in the finest bronze and placed on a pedestal of fine dressed granite about 10 ft. high. The memorial will be erected on a site at the foot of Lawyers' Brae.

LIST OF COMPETITIONS OPEN.

SEPTEMBER 15. SCHOOL, LOWESTOFT.—Designs are invited by the Education Committee for an elementary school to accommodate 500 boys at Romanhill. Premiums: £21, £10 10s., and £5 5s.

SEPTEMBER 16. LIBRARY AND ART GALLERIES, MANCHESTER.—Limited to the ten selected competitors in the first competition.

SEPTEMBER 29. PARISH HALL, SWANSEA.—Designs are invited for a parish hall, to be erected in the Swansea district at a cost of not more than £1,200. Particulars on application to Mr. Herbert Plant, Solicitor, 14, Fisher Street, Swansea.

OCTOBER 4. HOUSES, EASINGTON.—The Easington R.D.C. invite plans for three types of houses, of which it is proposed to build 100 at Murton Colliery, Durham, in streets of 20, with 16 ft. back streets, 18 ft. frontage, and garden ground in front of each house to a depth of 30 ft.; an earth-closet and outside pantry to be provided for each house. Type A: 28 ft. gable, 3 bedrooms, 1 living-room, 1 sitting-room, scullery (offshot), with kitchen range and bath. Type B: 25 ft. gable, 3 bedrooms, 1 living-room, scullery, with kitchen range and bath. Type C: 2 bedrooms, 1 living-room, and scullery, with kitchen range and bath. The successful candidate will receive 2½ per cent. commission upon the net cost of buildings when erected. Plans must be sent to Mr. J. M. Longden, Council Offices, Easington, Castle Eden.

OCTOBER 7. BATHS EXTENSION, BARNSLEY.—Barnsley Town Council invite drawings for a proposed extension of public baths in York Street and Race Street. Premiums, £50, £30, and £20. Particulars from Borough Surveyor, Manor House, Barnsley.

OCTOBER 7. HOUSING SCHEME, EVESHAM.—The Rural District Council invite competitive designs, with estimates of cost, for laying out a building site at Boadway, and the erection thereon of 30 cottages under the Housing and Town Planning Act, 1909. The architect whose design is accepted will be appointed to carry out the work at an inclusive fee of 5 per cent. nett, to include all travelling and other expenses. A block plan of the site and all necessary particulars may be obtained from E. H. Wadams, Clerk to the Council, Union Offices, Evesham, to whom applications, accompanied by a deposit of £1 1s., must be sent.

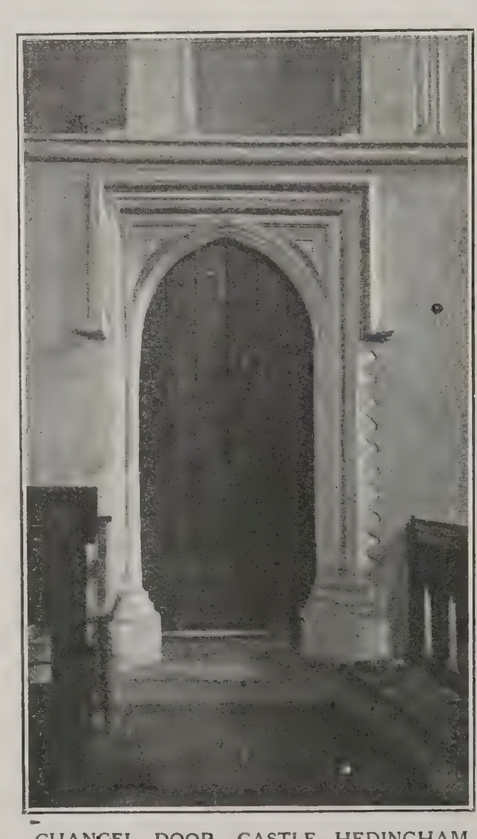
OCTOBER 12. SCHOOL, COSELEY.—Designs are invited for a school to accommodate about 200 children. Particulars may be obtained from the Education Offices, Coseley, near Bilston.

OCTOBER 14. ALTERATIONS TO HOTEL, BRISTOL.—Plans are required for alterations at the Grand Hotel. Particulars may be obtained from Mr. F. A. Jenkins, 44, Corn Street, Bristol.

OCTOBER 28. WORKHOUSE EXTENSION, SALFORD. — Premiums £20 and £10. Limited to architects practising in Salford and district. Particulars from Board of Guardians, Salford.

OCTOBER 31. NEW TOWN HALL, MARYLEBONE.—Premiums, £100, £75, and £50. Assessor, Mr. Henry T. Hare, F.R.I.B.A.

NOVEMBER 30. TECHNICAL INSTITUTE, CARDIFF.—The Cardiff Education Committee invite architects to submit competitive designs and estimates for a technical institute to be erected in Cathays Park, Cardiff. Mr. J. S. Gibson, F.R.I.B.A., has been appointed assessor. Full particulars may be obtained from John J. Jackson, Director of Education, Educational Offices, City Hall, Cardiff, on deposit of £2 2s.



CHANCEL DOOR, CASTLE HEDINGHAM CHURCH, SUFFOLK.

NOVEMBER 30. HOSPITAL, HASTINGS.—The Joint Committee of the East Sussex Hospital and the King Edward VII. Memorial Fund invite architects to submit competitive designs, etc., for the proposed new hospital. Mr. Edwin T. Hall, F.R.I.B.A., of 54, Bedford Square, London, has been appointed assessor. Conditions and instructions may be obtained from Mr. W. M. Rhodes, East Sussex Hospital, Hastings, on deposit of £1 1s. Premiums of £125, £75, and £50 are offered.

JANUARY 20, 1912. STATUE AT HAVANA.—Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana, before January 20. The sum of 100,000 pesos (about £20,600) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., where also further particulars (in Spanish) may be seen.

JANUARY 29, 1912. GOVERNMENT PALACE, MONTEVIDEO.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640, and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

JANUARY 31, 1912. FEDERAL CAPITAL CITY, AUSTRALIA.—Competitive designs are invited by the Commonwealth of Australia, for the laying-out of the Federal Capital City. Premiums are offered as follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered by January 31st, 1912, to King O'Malley, Minister of State for Home Affairs, Commonwealth of Australia.

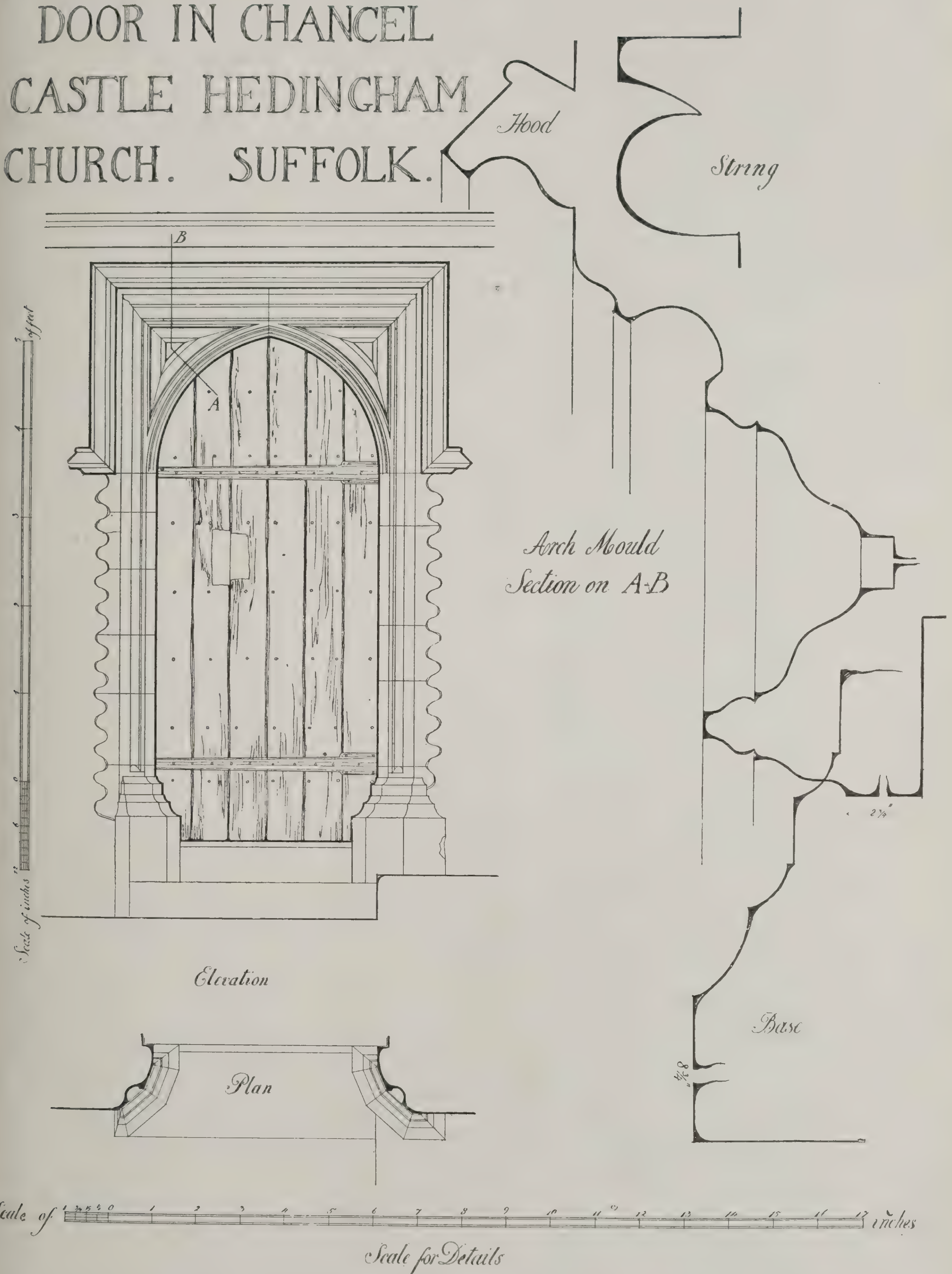
No date. INFIRMARY, ROCHDALE.—The Board of the Rochdale Infirmary have decided to proceed with a portion of a large extension scheme to cost about £16,000. It will include an operating theatre, staff accommodation, ophthalmic rooms, modernised in-patients' department, and an additional twenty-four beds. Provision is to be made for forty-eight beds at a cost of not more than £17,000. The assessor appointed for the limited competition is Mr. Alexander Graham, F.R.I.B.A., of London.

DETAILS, OLD AND NEW.—XXIV

Chancel Door, Castle Hedingham.

The village of Castle Hedingham lies in a hollow over which rises the old Norman keep, whose barren and grey cliff-like walls seem more akin to the works of Nature than Art. Indeed, to-day it looks like a huge rock set within a girdle of trees. Far below nestles the church. A great part of it is Norman; indeed the building is an epitome of all the Gothic styles. A delightful little doorway which leads from the

DOOR IN CHANCEL CASTLE HEDINGHAM CHURCH. SUFFOLK.



Scale for Details

MEASURED AND DRAWN BY BERNARD R PENDEREL-BRODHURST.

chancel to the vestry is shown in this issue. (The fine brick porch and a Norman doorway will be published later.) The doorway is late in date and probably belongs to the same years of the 15th century as the splendid brick tower. The detail is extremely interesting. The spandrels, formed between the pointed arch and the square outer frame, are deeply cut into the stone work, and are very effective. The plaster, with which the walls are covered, is a later addition, and has been finished against the stone facings by a waved line—a more picturesque way of finishing the plaster than the one usually adopted. Above the doorway is a crudely cut string-course, which is a part of the early building, while the windows over it are Transitional, between Norman and Early English. It is a beautiful church on the whole, with many interesting details.

J. M. W. H.

NEWS ITEMS.

Theatre Alterations.

Messrs. Patman and Fotheringham, Ltd., have secured contracts for alterations and additions at His Majesty's Theatre, Haymarket, W., and the Savoy Theatre, Strand, W.C.

* * *

New President of the Institution of Municipal Engineers.

Mr. Ernest A. Stickland, A.M.I.C.E., borough surveyor of Windsor, has been nominated president of the Institution of Municipal Engineers for the year 1911-12.

* * *

The Natural History Museum Site.

A settlement has been arrived at in regard to the question of the South Kensington site, and the Science Museum will now be proceeded with on the land to the north of the boundary of the Natural History Museum.

* * *

Lectures on Town Planning.

During the coming winter session of the University of Toronto Mr. Thomas H. Mawson, Hon. A.R.I.B.A., Lecturer on Landscape Design at the University of Liverpool, will deliver a series of lectures on town planning.

* * *

Two New Books.

Among Messrs. Macmillan's announcements for the autumn are a book on "The Churches of Constantinople" (other than Sta. Sophia), by Professor van Millingen, of Constantinople, and "The Practice of Water-colour Painting," by Mr. A. L. Baldry, price 12s. net, illustrated by colour reproductions of work of modern artists.

* * *

The New "Star and Garter."

The identity of the purchasers of the "Star and Garter" Hotel at Richmond has been partly revealed. It is stated that a prominent North of England firm, who are closely associated with important American enterprises now maturing in London, are interested in the deal. Mr. W. R. Waters, F.S.I., and Mr. W. A. Lewis, A.R.I.B.A., are the architects and engineers who are to reconstruct the hotel.

* * *

The Best Type of Working-class Dwellings.

At the annual conference of the Sanitary Inspectors' Association at Great Yarmouth last Wednesday, Mr. H. Johnson (Wimbledon) read a paper on "The Evolution of the Dwelling-house," in the course of which he condemned both the block dwelling and the tenement house as seriously detrimental to the health of the occupants. The most desirable type of dwelling for the worker and his family was, in his opinion, the separate house. Next to that the cottage flat was best as it gave the privacy of a real home, as well as sunshine and fresh air.

* * *

Electric Light in the Abbey.

Westminster Abbey has now been stripped of its Coronation fittings and restored to its original state. An advantage which the Ecclesiastical authorities have reaped from the Coronation is that an electrical installation used last June has been retained, and the nave, which was formerly very badly lighted by gas, will in future be illuminated by electricity.

* * *

Delegates to the Architects' Congress.

At the 9th International Congress of Architects to be held at Rome next month from October 2nd to 10th, H.M. Government will be represented by Sir Henry Tanner; the London County Council by Mr. W. E. Riley; the R.I.B.A. by Mr. Leonard Stokes, Mr. John W. Simpson, Mr. John Belcher, and Mr. J. J. Burnet; the Liverpool Architectural Society by Mr. Arnold Thornely; the Manchester Society of Architects by Mr. Percy S. Worthington; the Devon and Exeter Architectural Society by Mr. James Jerman; the Dundee Institute of Architects by Mr. W. Fleming Wilkie; and the British Fire Prevention Committee by Mr. Edwin O. Sachs.

* * *

Cylindrical Reinforcement.

The Second Report of the Joint Committee on Reinforced Concrete, which is dealt with in another part of the present issue, contains, under the heading "Pillars and Pieces under Direct Thrust," the following paragraph:—"The most efficient disposition of the lateral reinforcement would appear to be in the form of a cylindrical helix, the pitch or distance between the coils being small enough to resist the lateral expansion of the concrete. Jointed circular hoops as ordinarily made are apparently not quite so efficient." It is interesting to note in this connection that both hooped and spiralled reinforcement of concrete are covered by the well-known "Considère" patent.

* * *

Architectural Association Papers.

The curriculum of the Architectural Association for the session 1911-12 gives the following syllabus of meetings: October 2nd, Annual General Meeting; Presidential Address by Mr. Gerald C. Horsley, and Distribution of Prizes. October 16th, Mr. Raymond Unwin on "Town Planning, Formal or Irregular?" October 30th, Mr. H. H. Hill on "The A.A. Excursion to the Loire, 1911." November 13th, Discussion "That the true hope of Architecture lies in the study of good modern work." November 23rd, Conversazione. November 27th, Mr. Arthur T. Bolton on "Thoughts on Jacobean Architecture." December 11th, Mr. Alan E. Munby on "Is the Texture of Materials a Fetish?" January 15th, Mr. E. F. Strange on "Alfred Stevens." January 29th, Discussion "That modern House Planning tends to be over-elaborate." February 12th, Mr. Paul Waterhouse on "Bridges." February 26th, Mr. F. C. Eden on "Hopes and Fears for Architecture." March 11th, Mr. C. C. Brewer and Mr. C. A. Daubney on "American Architecture." April 15th, Mr. Lawrence Weaver on "Some Scottish Houses of the Renaissance." May 9th, Members' Dinner.

* * *

Lord Kitchener's Statue for Calcutta.

The models for the proposed statue o Lord Kitchener at Calcutta have been approved by the committee. The statu itself will represent him in field marshal's uniform, mounted on his favourite charger

* * *

"Ceresit" Waterproofing Composition.

Throughout this year there has been steady increase in the use of "Ceresit" fo waterproofing purposes, a large number o repeat orders having been received fron government departments, railway companies and other public bodies. At th present time "Ceresit" is being employe by the London and North Western Rai way Co. for the waterproofing of tw passenger subways at Stonebridge an Bushey, and Messrs. Vickers, Ltd., ar about to use it for a large tank which the are to construct at St. Albans. The tan which will be of concrete, will be rendere with "Ceresit" mortar varying in thic ness from $1\frac{1}{2}$ to 2 in.; the total area of th rendering being 2,022 sq. yds., for whic 500 gallons of "Ceresit" will be require

* * *

A Large Pressure Filter Order.

The Waterworks Department of t Sheffield Corporation have just plac with the well-known firm of Messr Mather and Platt, Limited, of Mancheste a contract for 32 patent mechanical pr sure filters and auxiliary plant capable dealing with a flow of 6,000,000 gallo per day. This order follows closely the very large one which the firm we recently successful in securing from t Ashton, Stalybridge and Dukinfield D trict Water Board.

* * *

The Trades' Training Schools.

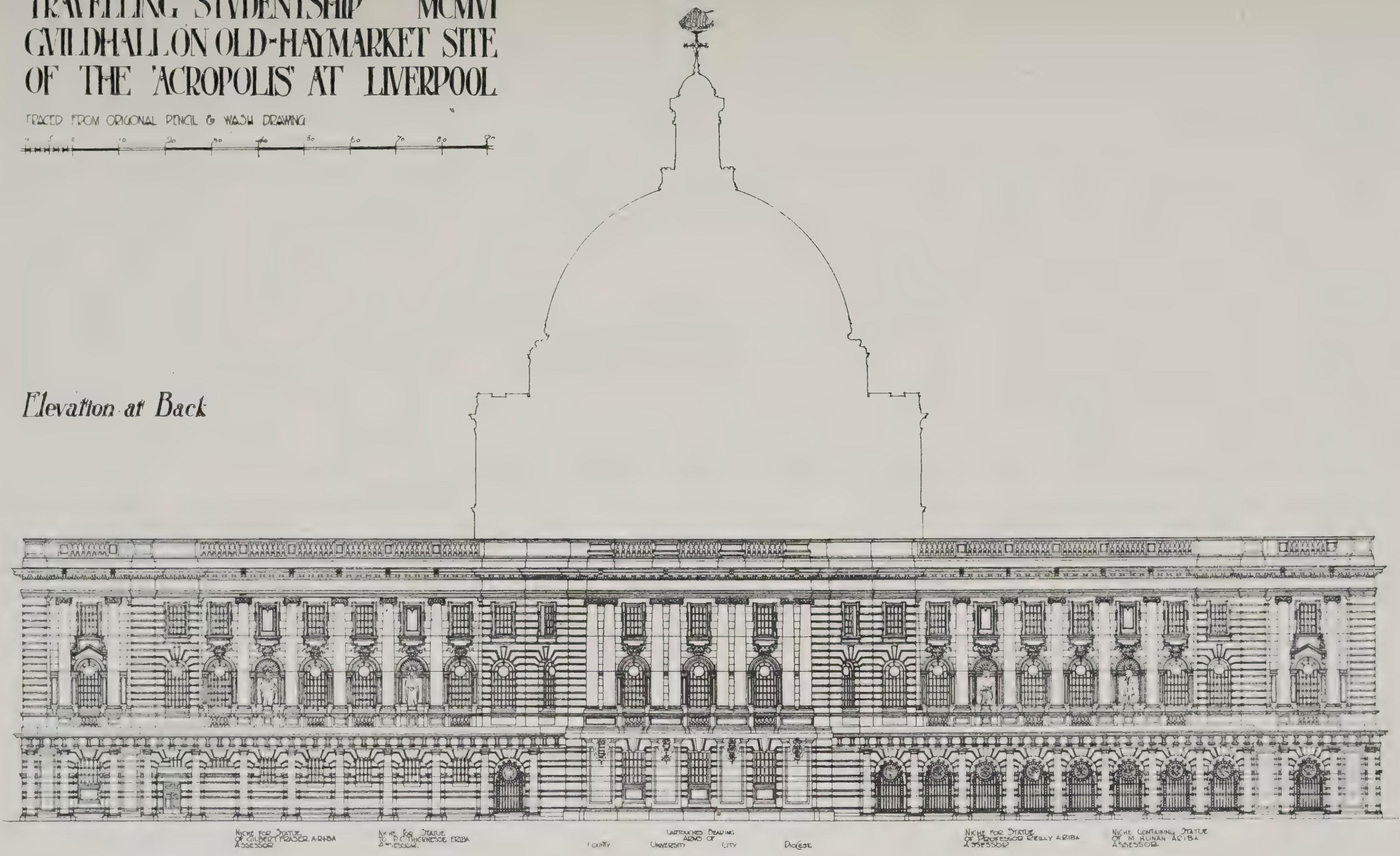
The Trades' Training Schools at 1 Great Titchfield Street, Portland Pla W., are carrying out a good work in deavouring to improve the technique each craft by instructing the men w actually obtain their living by their labo therein. The schools are conducted un the ægis of the Worshipful Companies Carpenters, Joiners, Painter-Staine Plaisterers, Tylers and Bricklayers, a Wheelwrights, the director being Mr. Phillips Fletcher, F.R.I.B.A., F.S., A.M.I.C.E. The report of the judges on work done during the last session, which just been forwarded to us, commends v highly the excellence of the craftsm ship, and the photographic illustrati which accompany the report are am evidence of this. The new term began Monday last, September 11th.

OUR PLATE.

We illustrate in this issue a detail dr ing of Mr. Adrian Berrington's fine des for a Loggia in a Public Garden. drawing, which is one of a set, was view at this year's Royal Academy E bition. The complete set of drawings executed at the Royal Academy Scho 1910, gaining for Mr. Berrington a Tra ling Studentship of £60.

LIVERPOOL ARCHITECTVRAL SOCIETY TRAVELLING STVDENTSHIP MCMVI GVILDHALL ON OLD-HAYMARKET SITE OF THE 'ACROPOLIS' AT LIVERPOOL

TRACED FROM ORIGONAL PENCIL & WASH DRAWING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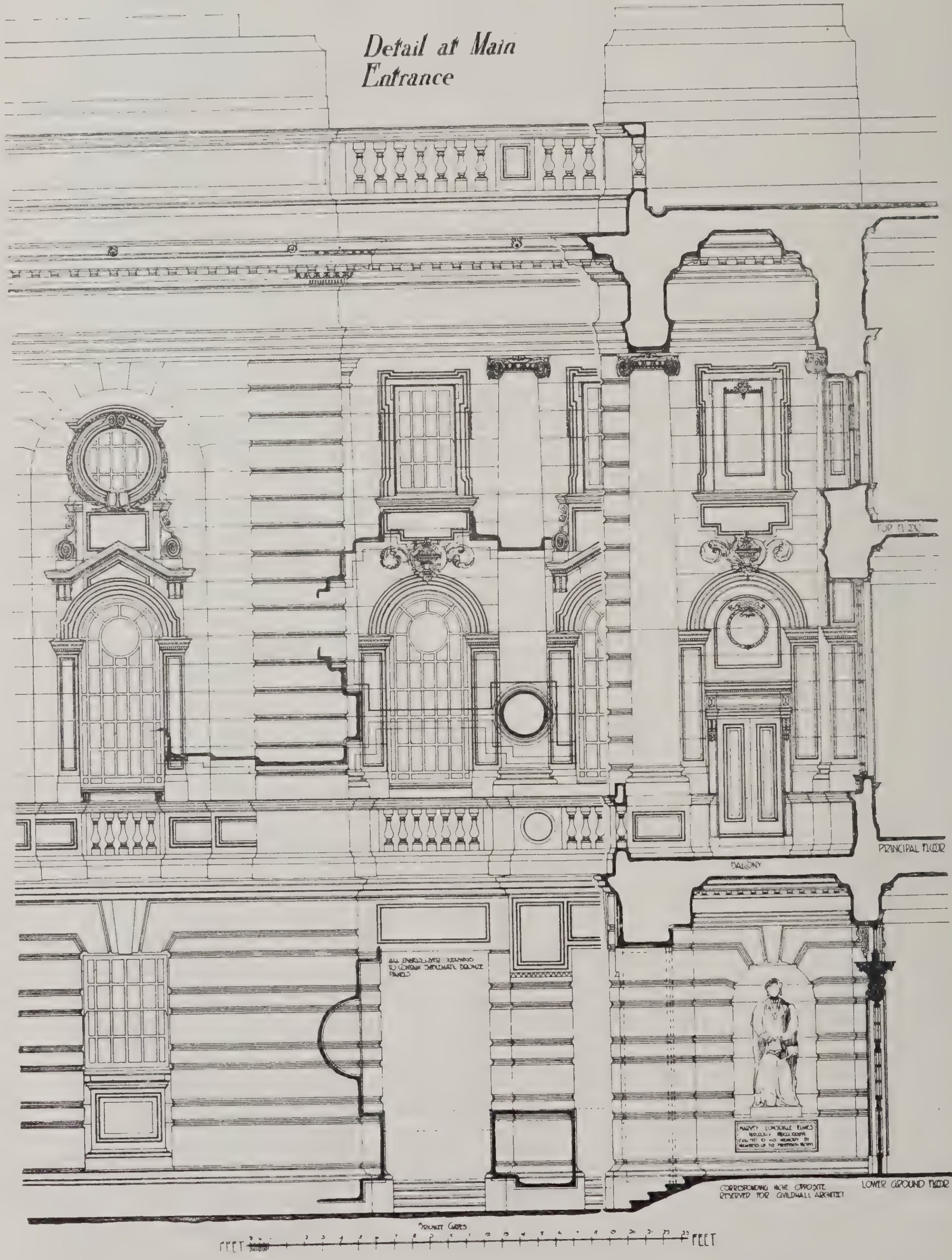
Elevation at Back
NICHE FOR STATUE OF GILBERT FRASER A.R.I.B.A ASSESSOR
NICHE FOR STATUE TO P. C. THICKNESSE F.R.I.B.A ASSESSOR.
CARTOUCHES BEARING ARMS OF
COUNTY
UNIVERSITY
CITY
DIOCESE
NICHE FOR STATUE OF PROFESSOR REILLY A.R.I.B.A ASSESSOR
NICHE CONTAINING STATUE OF M HUNAN A.R.I.B.A ASSESSOR.

BY J. WATSON CABRÉ.

Further drawings of this design were published in our issue for last week.

LIVERPOOL ARCHITECTVRAL SOCIETY. GVILDHALL ON OLD-HAYMARKET SITE
TRAVELLING STVDENTSHIP MCMVI. OF THE 'ACROPOLIS' AT LIVERPOOL


Detail at Main Entrance
TOP FLOOR
PRINCIPAL FLOOR
BALCONY
ALL PANELS OVER DOORWAYS TO CONTAIN EMBLEMATIC BRONZE PANELS
CORRESPONDING NICHE OPPOSITE RESERVED FOR GUILDHALL ARCHITECT
LOWER GROUND FLOOR
BRONZE GATES
FEET
FEET

BY J. WATSON CABRÉ.

CONCRETE AND STEEL SECTION.

(MONTHLY.)

The R.I.B.A. Report on Reinforced Concrete. The second report of the Joint Committee on Reinforced Concrete has just been issued by the Royal Institute of British Architects, 9, Conduit Street, W., where it can be obtained for one shilling. The First Report was published in 1907, since when the use of reinforced concrete has steadily increased. It was therefore considered desirable that the great advance made in this form of construction should receive careful consideration, and the conclusions arrived at are embodied in the Report just issued. The Joint Committee was thoroughly representative of the interests concerned, consisting of the following:—Chairman, Sir Henry Tanner, I.S.O., R.V.O., F.R.I.B.A., President of the Concrete Institute; Vice-Chairman, Professor W. C. Unwin, F.R.S., Hon. A.R.I.B.A., President of the Institution of Civil Engineers; Mr. Max Clarke, F.R.I.B.A., Mr. Wm. Dunn, F.R.I.B.A., Assoc. Inst. C.E., Mr. A. T. Walmisley, M.Inst.C.E., and Mr. H. D. Searles-Wood, F.R.I.B.A. (representing the R.I.B.A.); Mr. E. Dru Drury, F.R.I.B.A., and Mr. Thomas Henry Watson, F.R.I.B.A. (representing the District Surveyors' Association); Mr. Benjamin I. Greenwood and Mr. Frank May, J.P. (representing the Institute of Builders); Mr. J. W. Cockrill, M. Inst. C.E., A.R.I.B.A., and Mr. A. E. Collins, M.Inst.C.E. (representing the Municipal and County Engineers' Association); Captain J. Gibson Fleming, R.E., Assoc. Inst.C.E. (representing the War Office); Mr. C. H. Colson, M.Inst.C.E. (representing the Admiralty); Mr. Frank Capon and Mr. E. Fiander Etchells, F.Phys. Soc., A.M.I.Mech.E. (representing the London County Council); and Mr. Chas. F. Marsh, M.Inst.C.E., M.Am.Soc.C.E., and Mr. William G. Kirkcaldy, A.M.Inst. C.E. (representing the Concrete Institute). As the introductory note states, the section on "Materials" has been modified in certain details, and the section on "Methods of Calculation" has been recast in form, the standard notation proposed by the Concrete Institute having been adopted. This very useful table is inserted as a folder at the beginning of the Report. The sub-section on "Columns" has been revised, and the formulæ proposed have been recast so as to include the cases in which the lateral or helical binding is a material factor in the strength. In the prefatory note the Committee express the opinion that all by-laws should be so altered as expressly to include reinforced concrete among the recognised forms of construction, although, as it is pointed out, some local authorities retain the power to permit a reduced thickness of concrete when it is strengthened by metal.

The Effect of Fire on Concrete. The Report reiterates what has already been established, that concrete in which limestone is used for the aggregate crumbles when subjected to very fierce fires, and that concretes of gravel or sandstone also suffer in this way, though to a rather less extent. It has been shown that concrete containing coke-breeze, cinders, or slag as aggregate is only superficially injured by fire, and that concrete of broken brick suffers more than cinder concrete, and less than gravel or stone concrete. With regard to fire-resistance, it is stated that rigidly attached web members, loose stirrups, bent-up rods, or similar means of connecting the metal in the lower or tension sides of beams or floor slabs with the upper or compression sides of beams or slabs not usually injured, are very desirable. In all ordinary cases a cover of ½ in. on slabs and 1 in. on beams has been found sufficient, and it is undesirable to make the covering thicker. All angles should me rounded or spayed to prevent spalling off under heat.

The Quality of Materials. The Report includes a luminous survey of the materials of construction, and recommends only the use of Portland cement complying with the requirements of the specification adopted by the British Engineering Standards Committee; in general, the slow-setting quality should be used. Every lot of cement delivered should be tested, and, in addition, the tests for soundness and time of setting, which can be made without expensive apparatus, should be applied frequently during construction. The cement should be delivered on the work in bags or barrels bearing the maker's name and the weight of the cement contained. Sand, it is stated, should be composed of hard grains of various sizes up to particles which will pass a ¼ in. square mesh, but of which at least 75 per cent. should pass ⅛ in. square mesh. Fine sand alone is not so suitable, but the finer the sand the greater is the quantity of cement required for equal strength of mortar. It should be clean and free from ligneous, organic, or earthy matter. The value of a sand cannot always be judged from its appearance, and tests of the mortar prepared with the cement and the sand proposed should always be made. Washing sand, it is pointed out, does not always improve it, as the finer particles which may be of value to the compactness and solidity of the mortar are carried away in the process.

Aggregate is the subject of paragraph 6 of the section relating to materials, to which a foot-note is appended stating that coke-breeze, pan breeze, or boiler ashes should not be used for reinforced concrete. It is inadvisable to employ clinker or slag, unless the material is very carefully selected. The proportions of the component parts of concrete—cement, sand, and aggregate—should in all cases be separately specified in volumes. The weight of a cubic foot of cement for the purpose of proportioning the amount of cement to be added, may be taken at 90 lbs. In no case should less dry cement be added to the sand when dry than will suffice to fill its interstices. For convenience on small works the following figures may be taken as a guide, and are probably approximately correct for medium silicious sand:

Parts Cement.		Parts Sand.		Parts Mortar.
1	+	½	=	1.20
1	+	1	=	1.50
1	+	1½	=	1.90
1	+	2	=	2.35
1	+	2½	=	2.70
1	+	3	=	3.00

The interstices in the aggregate should be measured, and at least sufficient mortar allowed to each volume of aggregate to fill the interstices and to leave at least 10 per cent. surplus. For ordinary work, a proportion of one part cement to two parts sand will be found to give a strong, practically watertight mortar; but where special watertightness or strength is required the proportion of cement must be increased.

Metal for Reinforcement. The metal used should be steel having the following qualities: (a) An ultimate strength of not less than 60,000 lbs. per sq. in.; (b) a yield point of not less than 32,000 lbs. per sq. in.; (c) it must stand bending cold 180 degs. to a diameter of the thickness of pieces tested without fracture on outside of bent portion; (d) in the case of round bars, the elongation should not be less than 22 per cent. measured on a gauge-length of eight diameters. In the case of bars over one inch in diameter the elongation may be measured on a gauge-length of four diameters, and should then be not less than 27 per cent. For other sectional material, the tensile and elongation tests should be those prescribed in the British Standard Specification for Structural Steel. If hard or special steel is used, it must be on the architect's or engineer's responsibility and to his specification. Before use in the work, the metal must be clean and free from scale or loose rust. It should not be oiled, tarred, or painted. Welding should in general be forbidden; if it is found necessary, it should be at points where the metal is least stressed, and it should never be allowed without the special sanction of the architect or engineer responsible for the design. The reinforcement ought to be placed and kept exactly in the positions marked on the drawings, and, apart from any consideration of fire resistance, ought not to be nearer the surface of the concrete at any point than 1 in. in beams and pillars and ½ in. in floor slabs or other thin structures.

Mixing and Laying. The Report emphasises the value of mixing concrete by machinery, by means of which, of course, greater uniformity and more regular distribution are obtained than by hand mixing. In laying the concrete, it is very necessary to observe that the thickness of loose concrete to be punned should not exceed three inches before punning, especially in the vicinity of the reinforcing metal. Special care is to be taken to ensure perfect contact between the concrete and the reinforcement, and the punning to be continued till the concrete is thoroughly consolidated. Each section of concreting should be as far as possible completed in one operation. Work should not be carried on when the temperature is below 34 degs. Fahr. The concrete when laid should be protected from the action of frost, and shielded against too rapid drying from exposure to the sun's rays or winds, and kept well wetted. All shaking and jarring must be avoided after setting has begun. The amount of water to be added depends on the temperature at the time of mixing, the materials, and the state of these, and other factors, and no recommendation has therefore been made. Sea-water should not be used.

The Striking of Centres. The time during which the centres should remain up depends on various circumstances, such as the dimensions or thickness of the parts of the work, the amount of water used in mixing, the state of the weather during laying and setting, etc., and must be left to the judgment of the person responsible for the work. The casing for columns, for the sides of beams, and for the soffits of floor slabs not more than 4 ft. span, must not be removed under eight days; soffits of beams and of floors of greater span should remain up for at least fourteen days, and for large span arches for at least twenty-eight days. The centering of floors in buildings which are not loaded for some time after the removal of same may be removed in a short time; the centering for structures which are to be used as soon as completed must remain in place much longer. If frost occurs during setting, the time should be increased by the duration of the frost.

Testing Materials Before Commencing Work. Before the detailed designs for an important work are prepared, and during the execution of such a work, test pieces of concrete should be made from the cement, sand, and aggregate to be used in the work, mixed in the proportions specified. These pieces should be either cubes of not less than 4 ins. each way, or cylinders not less than 6 ins. diameter, and of a length not less than the diameter. They should be prepared in moulds, and punned as described for the work. Not less than four cubes or cylinders should be used for each test, which should be made twenty-eight days after moulding. The pieces should be tested by compression, the load being slowly and uniformly applied. The average of the results should be taken as the strength of the concrete for the purposes of calculation, and in the case of concrete made in proportions of 1 cement, 2 sand, 4 hard stone, the strength should not be less than 1,800 lbs. per sq. in. Such a concrete should develop a strength of 2,400 lbs. at ninety days. Loading tests on the structure itself should not be made until at least two months have elapsed since the laying of the concrete. The test load should not exceed one and a half times the accidental load.

Methods of Calculation. The section dealing with Methods of Calculation shows, as we have stated, considerable rearrangement when compared with the Report of 1907. Sections on "Shear Reinforcement," "Pillars and Pieces under Direct Thrust," and "Pillars Eccentrically Loaded," are also contained in the new Report, which comprises also eight appendices and a tabular statement of the equations for solving singly reinforced beams.

The whole report is of vital importance to all concerned in reinforced concrete construction; and a copy should be procured and kept readily at hand, not only as an invaluable reference book for immediate use, but as a permanent and authoritative record of the theoretical and practical progress of reinforced concrete as a method of construction.

TESTS WITH PAINTS FOR STEELWORK.

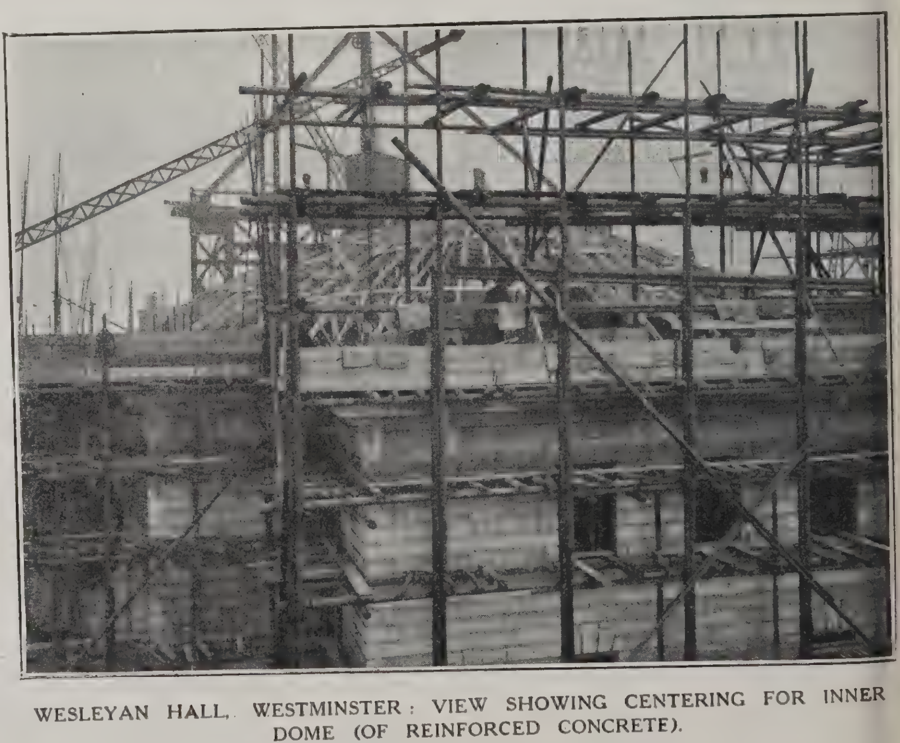
It was recently pointed out in this Journal that very material aid in determining the comparative merits of different paints for steelwork would be afforded if a scientific series of exposure tests were conducted with this end in view. It now appears that such a series has been carried out recently by the Paint Manufacturers' Association of the United States and the American Society for Testing Materials. At Atlantic City, N.J., more than 500 steel plates 3 ft. by 2 ft. and $\frac{1}{8}$ in. thick were fixed on an open framework, and after being given three coats of the several paints employed were exposed for nearly three years. They have now been examined, and according to the amount of rust apparent on the painted surfaces of the panels, as well as the degree of checking, chalking, scaling, cracking, peeling, loss of colour, and other signs of paint failure shown, ratings were given to each panel. The following table shows the rating obtained by those panels which were considered as meriting from 8 to 10, and having given the best all-round service:—

American Vermilion (Basic Chromate of Lead)	10.0
Chrome Green	9.8
Lead and Zinc Chromate	9.7
Zinc Chromate	9.5
Zinc and Barium Chromate	9.5
Black Oxide of Iron	9.5
Sublimed White Lead	9.0
Prussian Blue	9.0
Sublimed Blue Lead	8.8
Willow Charcoal	8.8
Composite Paint	8.8
Prussian Blue	8.5
Composite Formula	8.5
Orange Mineral	8.3
Red Lead	8.3
Composite Paint	8.2
Bright Red Oxide of Iron	8.1
One coat Zinc Chromate; one coat Iron Oxide	8.1
Venetian Red	8.
Composite Paint	8.

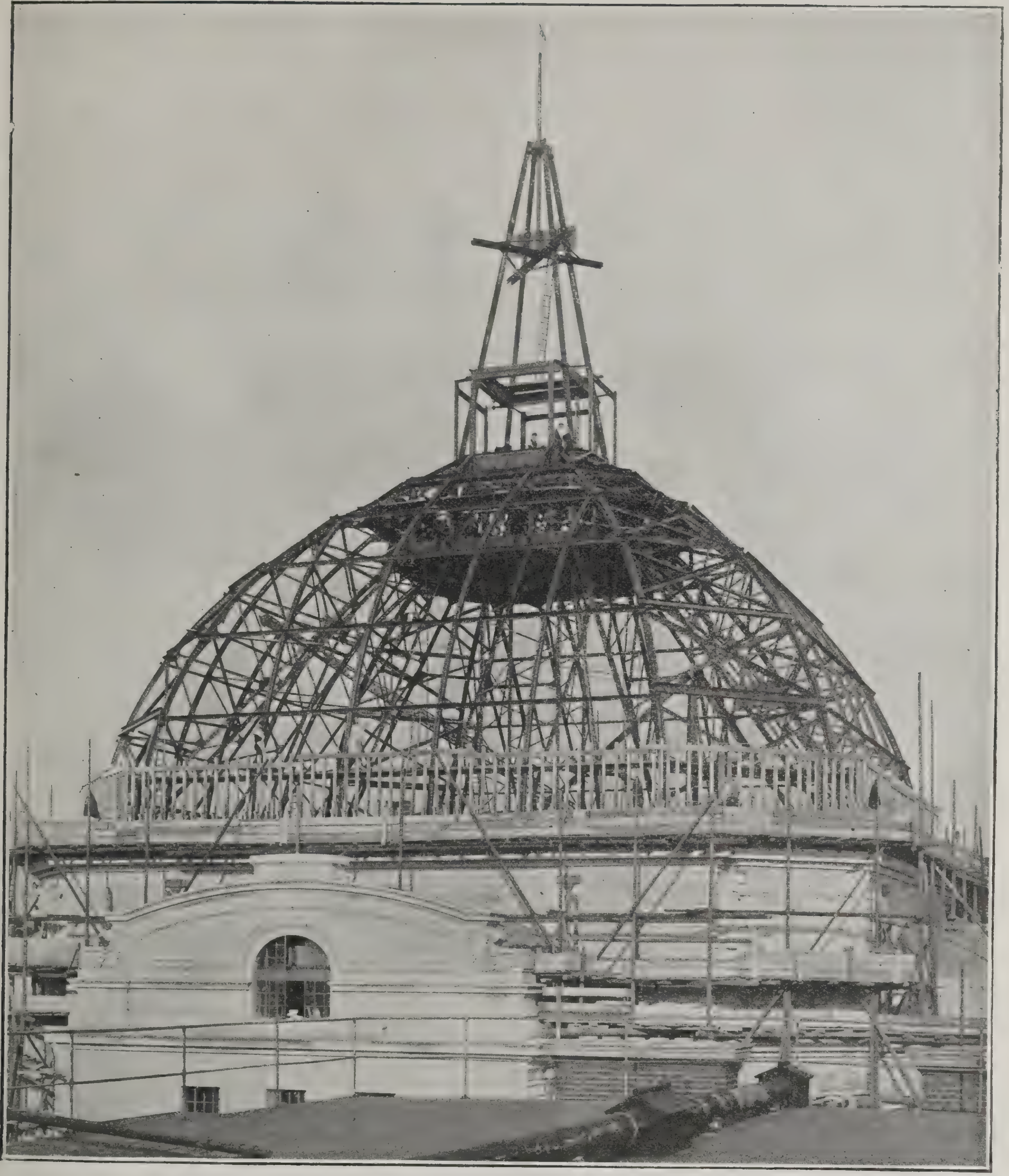
In connection with the foregoing, it may be pointed out that pigments which are either basic in nature or which possess a chromic acid content, and especially pigments which contain both o these features, are generally of the inhibitive type, and it has been proved tha pigments of this type are superior to al others as protectors of steel from rust. Inhibitive paints are paints made fro well-balanced formulas containing pigments of an inert or neutral nature, suc as iron oxide, etc., reinforced with a sufficient percentage of the high-class inhibitive pigments to ensure an inhibitiv action. The use of such paints will resul in better protection to structural stee than has heretofore been attained throug the use of the ordinary type of meta paints found on the market. America vermilion, the pigment which receive the highest rating in the tests, is chemically a basic chromate of lead. It i naturally an expensive pigment, bu Cashman's new process for producin chromatised inhibitive pigments ha greatly lowered the cost of this valuabl pigment and made it available for use i large quantities even in moderate-price paints.

THE OUTER DOME OF THE WESLEYAN HALL, WESTMINSTER.

The framework of the dome which is no in course of erection over the Wesleya Hall, Westminster (Messrs. Lancheste and Rickards, FF.R.I.B.A., architects), constructed entirely of mild steel British manufacture, and rolled the Standard specification. It consist roughly, of a steel plate curb all round th main walls, and dowelled thereto wit lewis bolts. From this curb spring 24 ri of varying designs, according to outline some of them weighing up to $3\frac{1}{2}$ tons eac The ribs are built up of double 8 in. $3\frac{1}{2}$ in. channel-section backs, bent to curv ties of double 6 in. by 4 in. angles, wi suitable web bracing bars all proper



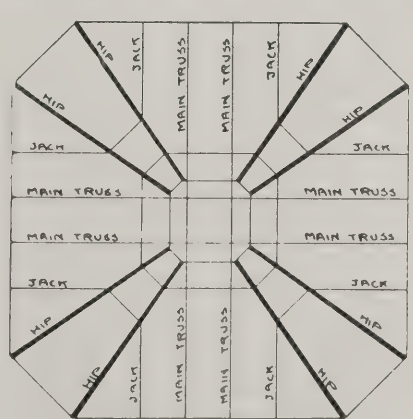
WESLEYAN HALL, WESTMINSTER: VIEW SHOWING CENTERING FOR INNER DOME (OF REINFORCED CONCRETE).



WESLEYAN HALL, WESTMINSTER: THE STEEL FRAME OF THE OUTER DOME.

LANCHESTER AND RICKARDS, FF.R.I.B.A., ARCHITECTS.

iveted. The ribs connect to, and are sup-
orted by, a heavy central cage measuring
o ft. across at the top, and having a total
epth of 57ft. It is built up of angle sec-
ons with suitable bracings of flats and
ngles, all properly riveted to suitable
usset and connection plates. The lower
art of the centre cage for about
4 ft. is to be utilised for carrying a
aircase to give access to the top of the
ome, this centre part having no support
om below. Around the outside of the
ome ribs are fixed six rows of purlin bars
f channel and angular sections, securely
nnected to every rib, and bracing all
gether. These purlins will carry the tim-
er work, which, in turn, will take the
oarding for the ornamental lead covering.
rom the top of the centre cage, described
ove, springs a framed tower having a
ase of about 21 ft. sq. and rising to a



KEY PLAN

height of 41 ft. above which continues the centre tube for a further 12 ft. This framed tower is built up of beam sections with plate and angle bracings.

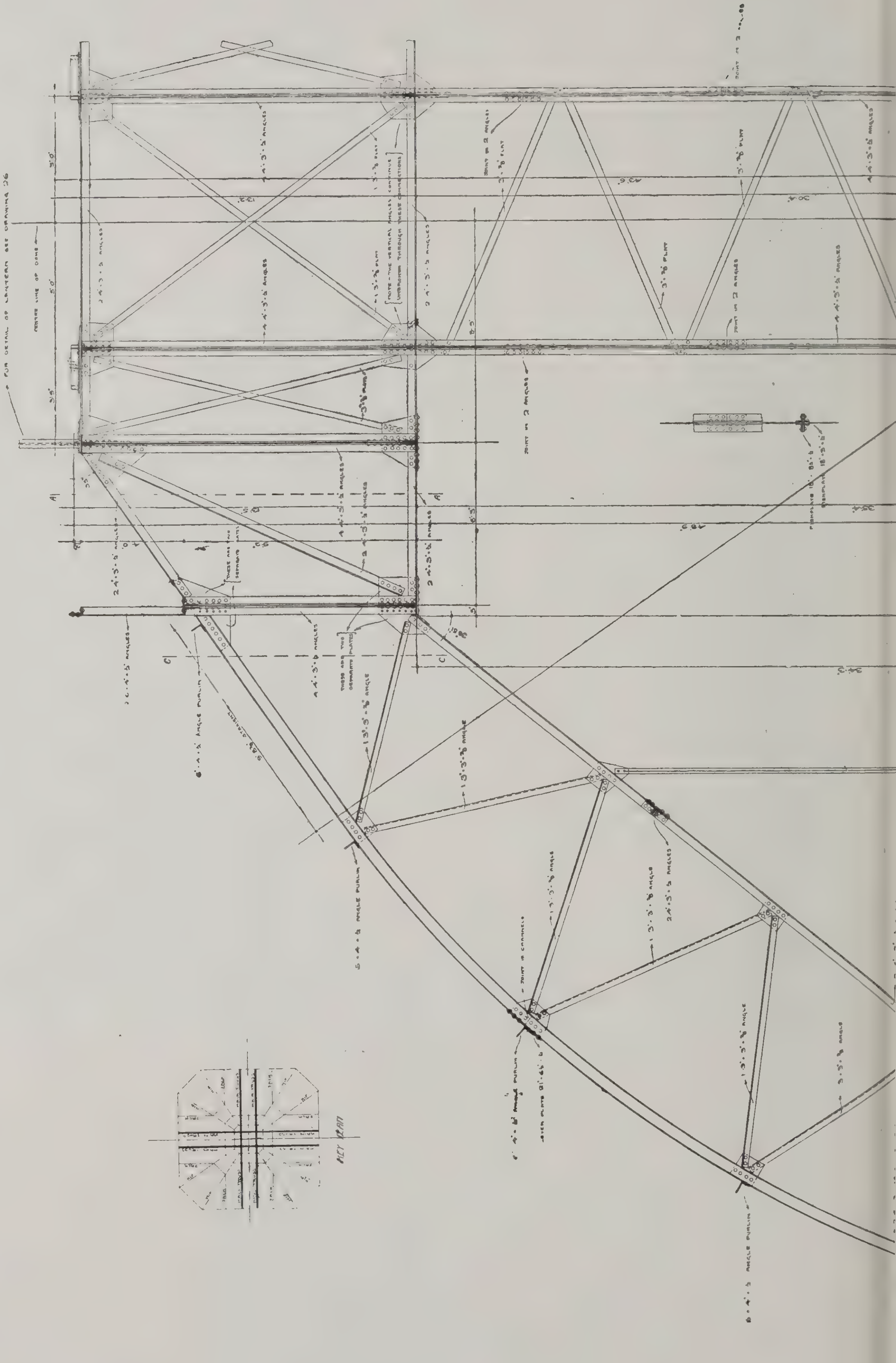
The total height of the steel dome above the curb plate is 101 ft., and the approximate weight of the steel is 150 tons. All the joints, after erection, have been riveted.

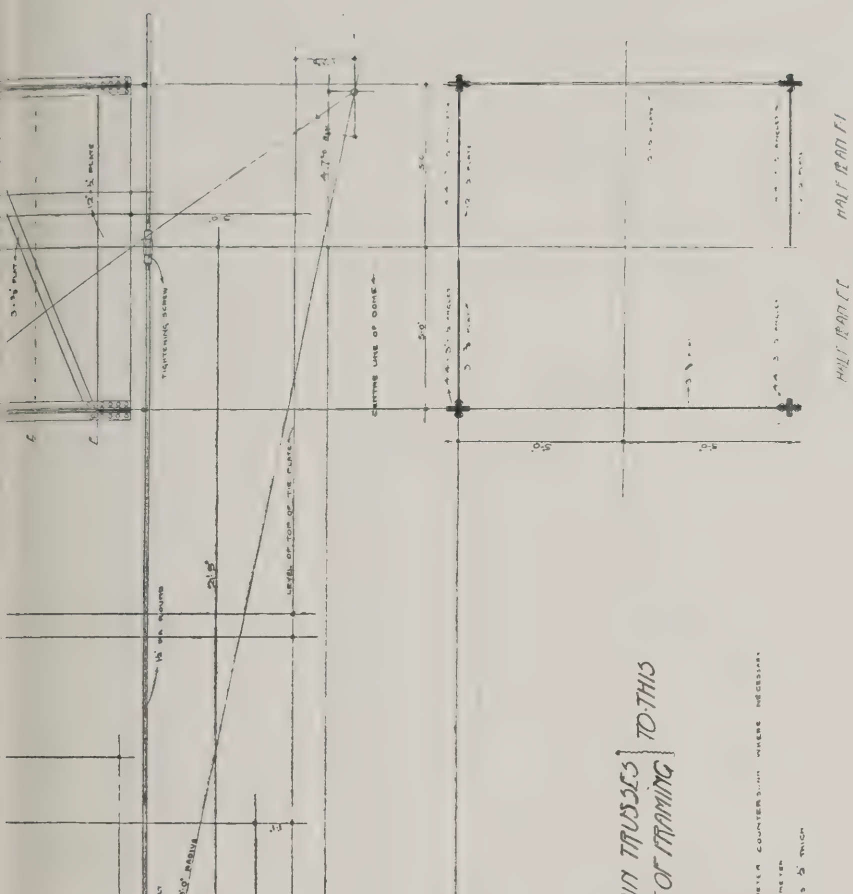
Although the fixing of this dome has been an extremely difficult and hazardous work, no accident of any sort has occurred; and it should be remembered that the men have been working at levels as high as 200 ft. above the pavement.

The constructional steelwork has been made and erected by Messrs. A. D. Dawnay and Sons, Ltd., of London and Cardiff. The reinforced concrete work is by the Trussed Concrete Steel Co., Ltd., (Kahn System).

· WESLEYAN · HALL ·

DETAIL OF MAIN TRUSS & CENTRAL FRAMING OF DOME





GERMAN METHODS OF PORTLAND CEMENT MANUFACTURE.*

BY DR. OTTO SCHOTT.

The yearly output of Portland cement in Germany to-day amounts to 30,000,000 barrels, which are made in about 100 factories, of which 96 are united in the Association of German Portland Cement Manufacturers.

About one-fourth of the cement works are in Rheinland and Westphalia, close together. The proximity of the coal mines and an excellent raw material have favoured the building of so many works in one spot. Similar groups of cement works are found near Hannover, Hamburg and in Silesia.

Manufacturing Syndicates.

There are at present in Germany five syndicates, the oldest and firmest of which is the South German Cement Syndicate, which was prolonged last year until the year 1925. Each factory is given a "quota" in proportion to its producing capacity, and it participates in proportion to its "quota" in the increase in consumption. The sale of the cement is done through a central office, which has five further sales-offices under it to facilitate the transaction of business. No factory can sell direct to the consumers, and all sales must be made through the sales-offices. The sales territory of each syndicate is carefully defined by contract, so that each syndicate may only sell within definite circuit of the factories belonging to it, whereby large economies in freight are made. The price of a barrel of cement is at present from 4s. to 5s.

Raw material for Portland cement is found nearly all over Germany, principally limestone with shale, and it frequently has naturally the proper combination for Portland cement. Such deposits are found in south Germany, principally in Württemberg, in the Swabian Jura, around Hannover and also on the Rhine. Some factories, principally in central Germany, use limestone with clay, which is mostly very damp. The cement works on the northern coast around Hamburg and Stettin use wet chalk and clay as raw material, and work on the wet process. Such pure limestone as is used for cement-making in many places in America is not met with in Germany. On this account white Portland cement is not made in Germany on a large scale.

The Quarry.

In the German quarries, where the lime stratum, as in Westphalia, is only 20 ft. thick, the stone is loosened by hand and shovelled into the cars. Only small tip-cars containing about 1 sq. yd. are used, and they are hauled direct into the factory by means of a wire rope-way.

The entire wall of the quarry is undermined to a breadth of 65 to 160 ft. by driving single horizontal galleries 65 ft. long into the wall. At a depth of 33 ft. these are joined together by a cross-drift, so that finally the whole side of the quarry rests only on single pillars 6½ ft. high and 6½ ft. in diameter. Each of these pillars is then bored in three places and the drill-holes are charged with donarit, dynamite not being used in Germany on account of its dangerous properties.

As soon as the so-called "fall" is prepared, the charges are all fired simultaneously by electricity, the pillars are all blown away at the same time, the side of the quarry loses its support and falls to pieces, at the same time breaking up the large rocks. The material is then shovelled into cars by hand.

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*Extracts from a paper read before the Association of American Portland Cement Manufacturers, Kansas City, June 12th, 1911.

Rotary Driers.

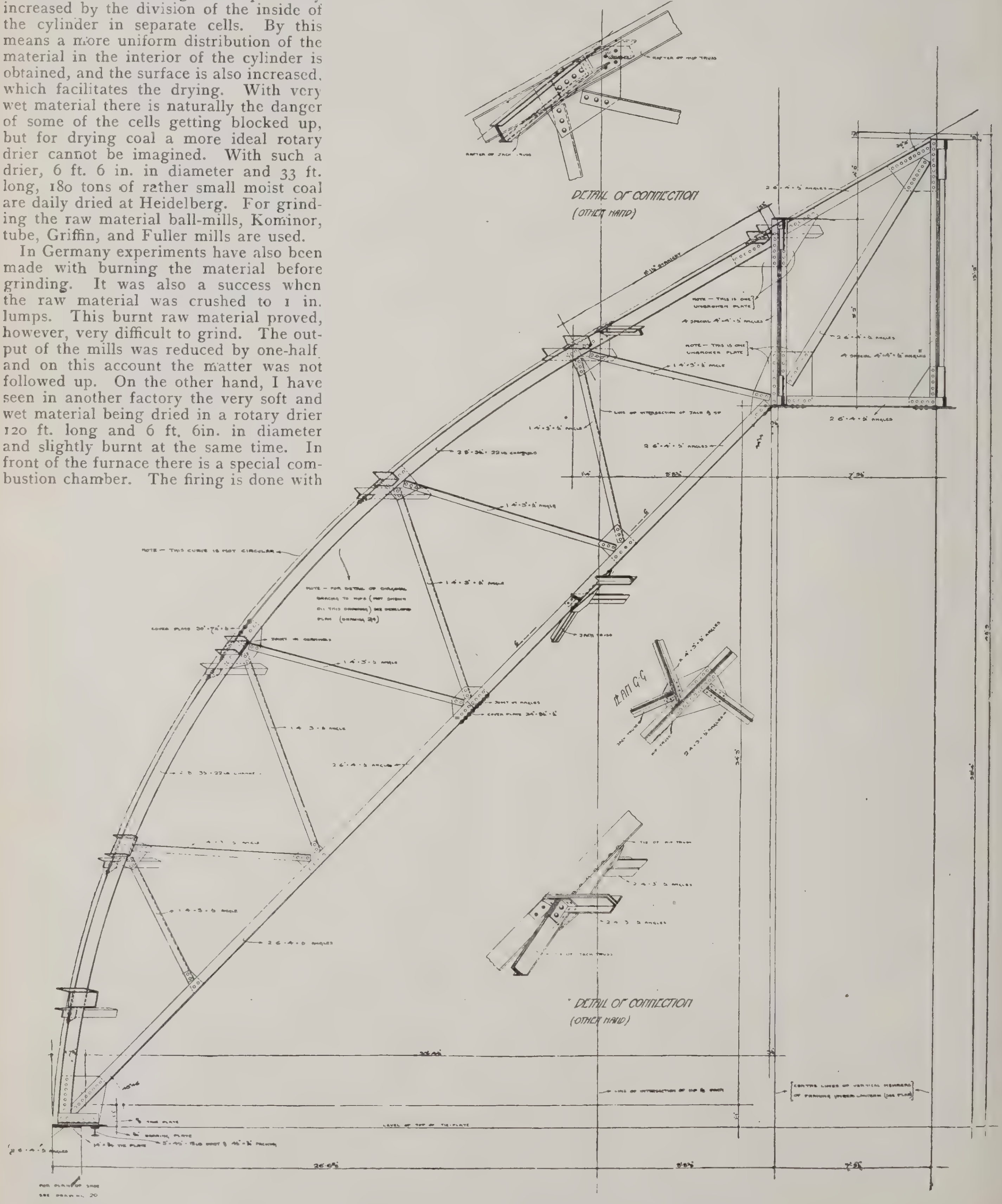
For drying, the Cummer rotary drier is much used in Germany. In general, the German rotary drier has a diameter of only 39 in.

I should like to make mention here of a special rotary drier, with which the utilization of the hot gases is profitably increased by the division of the inside of the cylinder in separate cells. By this means a more uniform distribution of the material in the interior of the cylinder is obtained, and the surface is also increased, which facilitates the drying. With very wet material there is naturally the danger of some of the cells getting blocked up, but for drying coal a more ideal rotary drier cannot be imagined. With such a drier, 6 ft. 6 in. in diameter and 33 ft. long, 180 tons of rather small moist coal are daily dried at Heidelberg. For grinding the raw material ball-mills, Kominor, tube, Griffin, and Fuller mills are used.

In Germany experiments have also been made with burning the material before grinding. It was also a success when the raw material was crushed to 1 in. lumps. This burnt raw material proved, however, very difficult to grind. The output of the mills was reduced by one-half and on this account the matter was not followed up. On the other hand, I have seen in another factory the very soft and wet material being dried in a rotary drier 120 ft. long and 6 ft. 6in. in diameter and slightly burnt at the same time. In front of the furnace there is a special combustion chamber. The firing is done with coal-dust. This factory, which formerly could never get its raw material dry, is now working very successfully.

Method of Mixing.

In Germany the arrangement of weighing the clay and the lime and then mixing it is rarely met with. Most works are able, on account of their favourable raw material, to make approximately the correct composition and mixing in the pit, where the removing of the raw material is done exactly in accordance with the instructions of the chemist. The chemist knows exactly which layers contain more lime and which contain more clay. In accordance therewith he has the proper proportion of clay and lime sent up. In the German works the chemist takes the first place, and he also supervises the whole of the machine plant. Every two hours the percentage of lime in the raw material is determined in the laboratory, and according to whether it turns out high or low, instructions are given to send up more clay or more lime.



WESLEYAN HALL, WESTMINSTER: DETAIL OF HIP TRUSS TO DOME.

factory has to adjust its mixture to 76 to 77 per cent. carbonate of lime. ground material is passed for seven into the same bin, and care is taken read the ground material in uniform s by means of suitable conveying inery. If the material has been ed in horizontal layers, the different s fall together when emptying the and so give an average of 76.6 per carbonate of lime.

The Kiln.

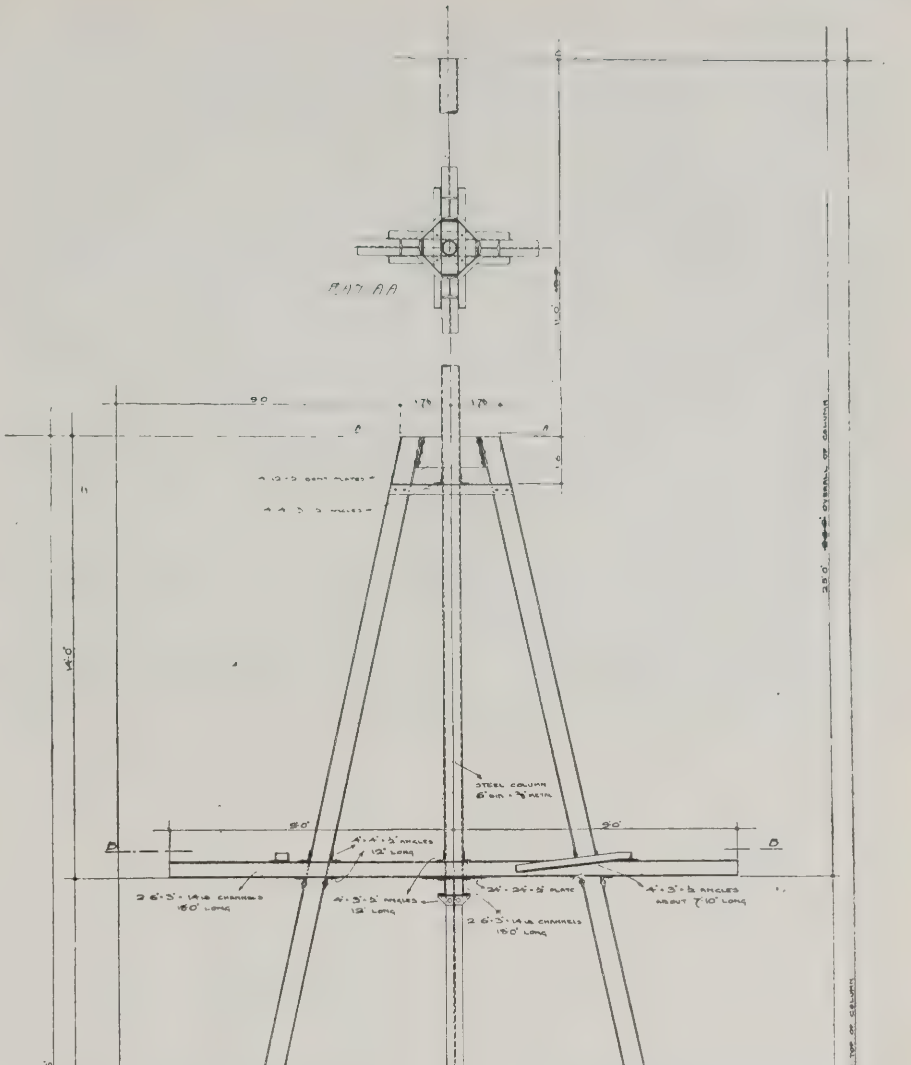
ie burning of the cement is to-day in rotary kilns in two-thirds of the nan factories. Vertical kilns and Hoff- ring kilns are still found, but only aces where wages are very low. The kilns were built 81 ft. long and 6 ft. eter, but the length was gradually ased to 120 ft., and recently kilns have erected 150 ft. long. These are the est up to the present. German makers not yet quite clear as to whether the kilns are better, especially as they been able to use the waste heat with ntage for other purposes. The omy of a kiln and not the output turns cale in Germany, and manufacturers d sooner put up two kilns of smaller city, if the burning can be done there- more economically than with one kiln. The engineering works, it is recommend long kilns. 250 ft. in h and 9 ft. in diameter, as with these nd gases have a temperature of only leg. centigrade, and the heat is best ed in these long kilns. But no kiln ch length is in operation in Germany. Germany, where fuel is very dear, s sought from the commencement to e the heat as much as possible. On account each rotary kiln is provided a cooler, in which the clinker is cooled awing air through it. The same fan blows the coal dust into the kiln s the air through the cooler, which is heated to 250 deg. centigrade.

e injection of the coal is done by fans, , as I have already mentioned, draw air from the coolers. In order to n perfect and uniform combustion the dust is fed into the air current of an by means of a system of double s.

mpressed air is not used in Germany ajecting the coal dust. Experiments with showed no benefit.

e lining of the kilns is done either adhesive sandbricks, firebricks, or s made of clinker and cement. Ad- e sandbricks are useless unless a is formed in the kiln, as otherwise ard clinker causes heavy wear. But rotective layer of clinker is deposited, they are the cheapest kiln lining. In factories attempts have been made y to line the kilns with concrete made mixture of rotary kiln clinker and nt. It has been found that the con- in the kiln will last a long time (one if the kiln is allowed to stand a lays after the lining, so that the con- can harden properly.

atent has been taken out in Germany so-called widened clinkering zone. ding to this patent, the front part of iln, in which the clinkering proper place, and which otherwise was only 5 in. in diameter, is enlarged to 8 ft. diameter. It is asserted that by this atput of the kiln is increased and the onsumption reduced.



WESLEYAN HALL. WESTMINSTER: DETAIL OF STEELWORK IN LANTERN OF DOME.

(Plan on Next Page.)

ereas formerly the opinion prevailed the ground raw material should be ened before being fed into the kiln, factories have found out a device to the dry material. The material falls t from the conveyor through a pipe into the kiln. By this means the mixing worm, which required attention and much power, is no longer required, fuel is saved, and the output of the kilns is increased by being fed with dry material. Rotary kilns without coolers are not found in Germany and vertical coolers are also unknown.

The cooling cylinders are always placed under the kilns and above the floor.

The front end of the cooler is perforated like a screen to sort the clinker, and only the coarse clinker requires to be crushed for the cement mill. In front of each cooler an automatic weighing machine is placed, which also makes automatic records, so as to afford an exact check on the output of each kiln. The coal dust for each kiln is weighed in the same manner, and coal consumption and output are noted hourly on a special board. There is now in Germany a drum weighing machine, with which everything can be weighed—pulverized coal, cement, and hot clinker.

Storing the Cement.

The finished ground cement is stored in large square bins of 25,000 to 100,000 barrels. Preference is given to the largest bins possible. This is to get, when withdrawing the cement, as large a quantity as possible, by which uniformity is obtained. Round concrete silos are seldom used in Germany. On the other hand, a large stock of cement ready packed in bags is kept, the bags being piled twenty-five high. The piling of the sacks is done by a band conveyor.

For packing, the automatic twin scales, system Ahlefeld, are much used. They weigh very correctly Capacity, 1,800 bags in ten hours.

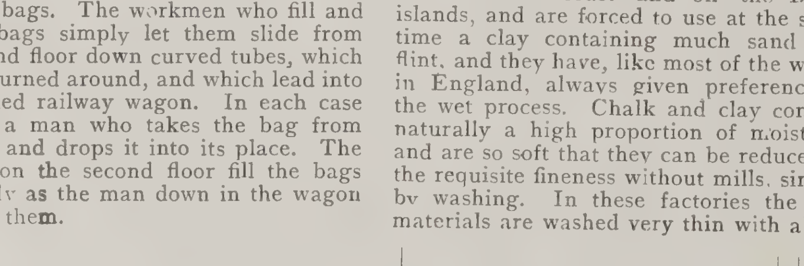
The storage house is built so that thirty railway cars go direct into the middle of the house on two tracks running side by side. The room in which the cement is packed is situated on the second floor directly over the railway cars. The cement is taken from the bins by elevators and conveyors to the thirty automatic packing machines on the second floor, where it is put into bags. The workmen who fill and tie the bags simply let them slide from the second floor down curved tubes, which may be turned around, and which lead into the opened railway wagon. In each case there is a man who takes the bag from the tube and drops it into its place. The packers on the second floor fill the bags as quickly as the man down in the wagon can stow them.

In other works where the railway siding is a long way distant from the packing shed, a belt conveyor leads from the packing shed to the railway cars, and the bags slide down an inclined chute directly into the car, where they are stowed by one man. The belt conveyor runs directly in front of the packing machines on a level with the floor, so that the workmen can lay the bag directly on the conveyor as soon as it is filled and tied up. If six automatic scales are at work, the bags follow one another on the belt conveyor at intervals of 6½ ft., and a car can be filled in ten minutes, though German railway trucks do not hold more than 300 bags.

Bags made of jute are mostly used, rarely of canvas. Paper bags are still too dear in Germany and therefore not used. The cleaning of the bags is done in large revolving drums. Electric sewing machines, with dust exhaustors, are used for sewing and mending. A group of twenty cement works in Westphalia have a so-called "bag central," where new bags are made, and the old ones cleaned and repaired. The empty bags are sent by the customers to the "central," where they are sorted, repaired, cleaned, and returned to the different works. The cost of the whole work does not amount to quite ¼d. per bag. Only women are employed for mending. The same group has also its own barrel factory, in which the barrels for about twenty works are made.

The Wet Process.

Many of the works situated in the north of Germany make their cement from the chalk on the coast and on the Baltic islands, and are forced to use at the same time a clay containing much sand and flint, and they have, like most of the works in England, always given preference to the wet process. Chalk and clay contain naturally a high proportion of moisture, and are so soft that they can be reduced to the requisite fineness without mills, simply by washing. In these factories the raw materials are washed very thin with about
80 per cent. of water, and, acc
the arrangement of the plant, t
and the coarse sand either sett
bottom as the heavier constituents
are separated from the thin s
screens. The slurry runs from the
basins into large settling basins,
is allowed to settle. The water
on top is let off from time to time
sun and air help gradually to dr
water remaining in the slurry
becomes stiff enough to be dug o
spade and pressed into bricks for
or ring kilns, which are still used
of the factories that work on the
cess. Some of these factories,
have recently installed rotary ki
pump the slurry containing 40 t
cent. water direct from the settli
into the kilns. It is often month
the slurry gets the consistency des
it is certainly a disadvantage of
process that so much time is lost b
product made months ahead can
ally turned to value. Enormou
are often represented by this half
product.



WESLEYAN HALL, WESTMINSTER: PLAN OF STEELWORK IN LANTERN OF DOME.

The wet process is considera
advantageous, when pure chalk
are to be had, and it is not necessa
attention to eliminating impuriti
shape of quartz, sand and flint. T
tion of 40 per cent. water then
to grind the material in the wa
This slurry is then simply run
so-called mixing basins, where it
up until the mixture is uniform.
necessary to thicken further this
cent. slurry, and it can be pumpe
to the kilns. With these two way
preparation it is presumed that t
and clay are naturally so soft
special mills are necessary for gri

A thick slurry plant is mostly
four stories, one above the othe
material comes from the pit to
floor. The large pieces of limest
here crushed to the size of a fist
directly on to the wet-kominors
below. The soft wet clay and mar
directly into this wet-kominor, and
ground with the addition of wate
rough slurry, which has 35 to 45 p
moisture, runs into the wet tub
which are placed in the floor belo
the wet-kominors, and here it is
quite fine. The factory has, acco
its size, a number of large mixing
which lie below and in front of
tube mills, and the slurry runs
pipes into these basins. A facto
ducing 1,000 barrels daily requires
four mixing basins of 500 barrels
each. As soon as a basin is three-
full, the mixture is made by test
slurry every two hours and then g
material either richer in clay or r
lime, and allowing it to run into th
The final adjustment can also be
letting the slurry run from one ba
the other. The mixing basins are
oval in shape; three stirrers run
basin to keep the slurry in constant
and mix it.

The slurry is then pumped by m
special pumps to small slurry bi
the kilns, and is burnt in the rota
in exactly the same manner
material. The feed pipe to the ki
be steep and wide, so that it d
shake. A difficulty with the bur
that the slurry is apt to roll togeth
large balls, which pass through the
ing zone too quickly and do not g
oughly burnt inside. The kilns
thick slurry process have in G
generally a length of 122 to 148
are 7 ft. 6 in. to 8 ft. 2 in. diamete

kilns in the Dyckerhoff works are er—150 ft. long and 9 ft. in diameter. rwise they are exactly the same as for the dry process. The clinker st as hard as the clinker made from material, and there is no difference e further process of manufacture.

ie best German cements with the est degrees of strength are still the nts made with the dry process, so the tion of quality is no inducement to go to the wet process. With proper tion just as good cement can be made e dry way as in the wet, if the correct ngements are made for a thorough ng. Still, there may be instances e the wet process is to be preferred ie dry, but such cases can only be led separately after a thorough test-of the raw material. I will give you points of view to be considered before ling, especially in Germany, where is very dear and forms a considerable of the cost of manufacturing.

ie economy in burning cement in y kilns depends on the following four s: (1) Cost of the installation; (2) s; (3) power consumption; (4) coal umption.

ie cost of plant is undoubtedly lower he wet process, as various arrange-s are not required which are neces-for the dry process. No rotary driers required nor bins for ground raw rial, the latter being substituted by heaper mixing basins. There is not ired for the wet process the dust-colng arrangements for the raw mill. The lings for the dry process take up rather room. The opinion that with the process the kilns would have to be er and larger has proved wrong, so with the dry process the same cost stallation has to be taken into account he kilns as with the wet process. How-, the extra cost of a dry plant com-d with a wet plant is not as much as it be assumed from the foregoing. nounts to 3 to 5 per cent. on the com-plant, and plays no great part when ilated on the barrel.

cording to the experience in Ger-the wet process will not reduce labour . As many people are required for ding to the wet grinding machines the mixing basins as with the dry ess for attending to the mills and nd material bins. The power con-tion of the mills is generally lower the wet process, especially with rials which are not of a hard nature as marl, clay, chalk, etc. With such the washing with water is effective divides the material into its finest , so that the mills have little work . But it is a different thing if hard stone and shale are to be ground wet. ie water is then of no assistance, and mills have to do the same work as the dry process. The economy in r is then very low and out of propor-to the higher coal consumption neces-to evaporate in the kiln the added r; and the higher the proportion of r in the slurry the higher the coal umption naturally becomes.

The Two Processes Compared.

iave already mentioned that a cement s in Germany is now about to change the dry process to the wet; the ons are that the factory in question o work a clay containing 15 per cent. ture and adds 12 per cent. water to aw meal before it runs into the kiln. ler such circumstances the superin-ent said that it did not matter so much her he added a further 10 per cent. r and introduced the thick slurry system, especially as he was never able to dry the clay properly.

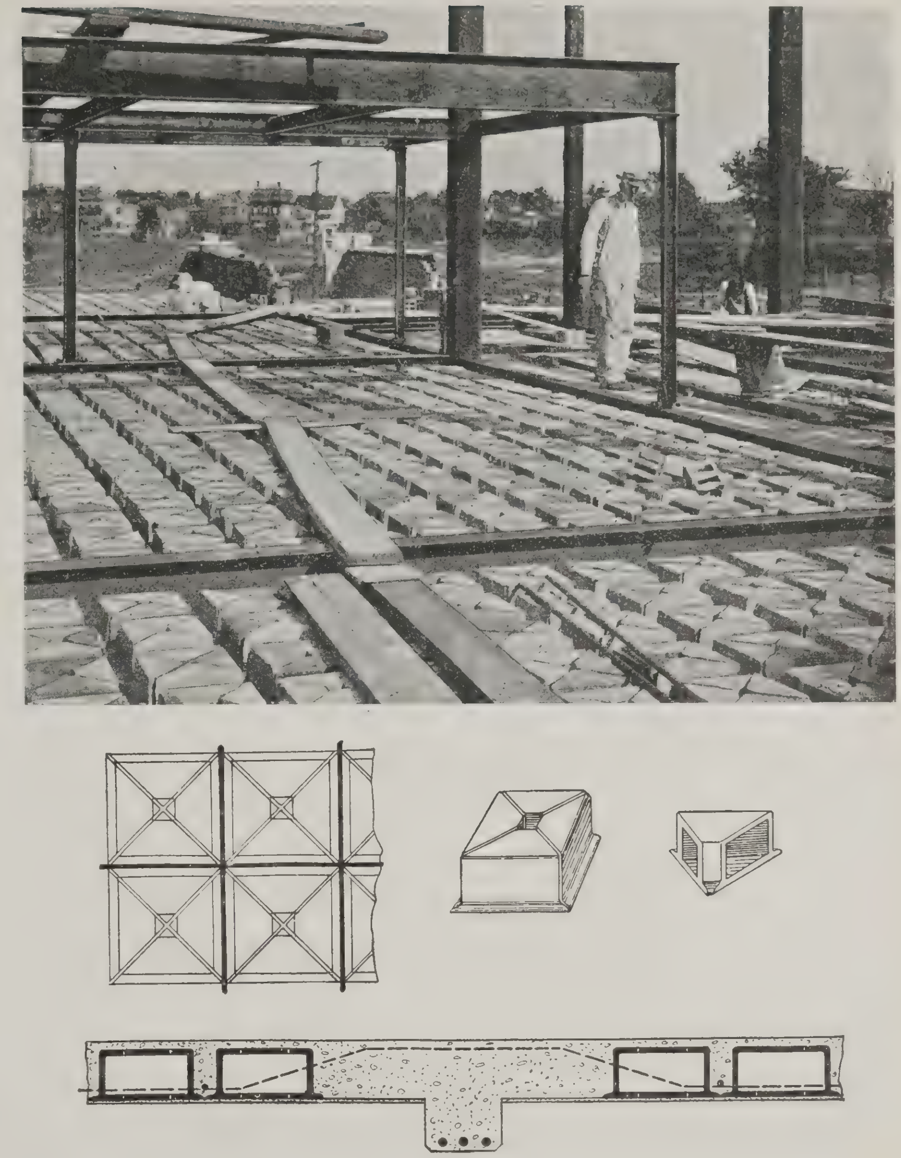


FIG. 1.—DENTILE FLOOR CONSTRUCTION: THE MITRE TILE.

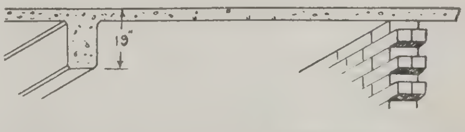
But I know of another works which is at present making alterations, but is retaining the dry system, although the clay contains nearly 20 per cent. water. My personal view is that wet preparation should only be chosen if the raw materials are not hard or plastic, and if the natural proportion of moisture already approaches that necessary for wet working. I consider it a mistake to work hard, dry material according to the wet process simply for the purpose of facilitating the mixing or of avoiding the dust. For to solve both these problems it is not necessary to introduce the more expensive wet process; it can be done just as well with the dry process.

DENTILE HOLLOW FLOOR CONSTRUCTION.

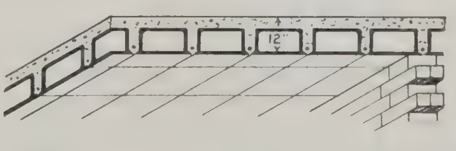
The patent rights of a new kind of fire-resisting floor, composed of hollow tiles and reinforced with Indented bars, have recently been taken over by the Indented Bar and Concrete Engineering Co., Ltd., of Westminster. The system is known as Dentile hollow floor construction, and comprises three types of floors, which are suited to certain individual conditions.

Fig. 1 shows the "mitre" tile method of construction, each unit consisting of four wedge-shaped portions, which fit accurately together, forming a closed hollow block. This permits the use of reinforcement in both directions, and renders possible a very large span without beams. The lip surrounding the tile forms the bottom of the concrete beam; the whole under surface of the floor, therefore, is completely covered by the tiles, which are roughened to receive plaster, no concrete being exposed.

The "bridge" tile, shown in Fig. 2, is intended for use on small spans where a one-way system of reinforcement is employed. It affords a complete tiled surface on the under-side of the floor for the reception of plaster; and, like the "mitre"



ORDINARY FLOOR OVER ROOM 30 ft. by 26 ft.



DENTILE FLOOR OVER ROOM 30 ft. by 26 ft.

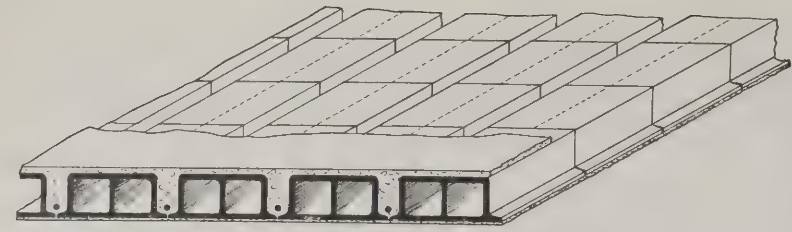


Fig. 2.—The Bridge Tile.

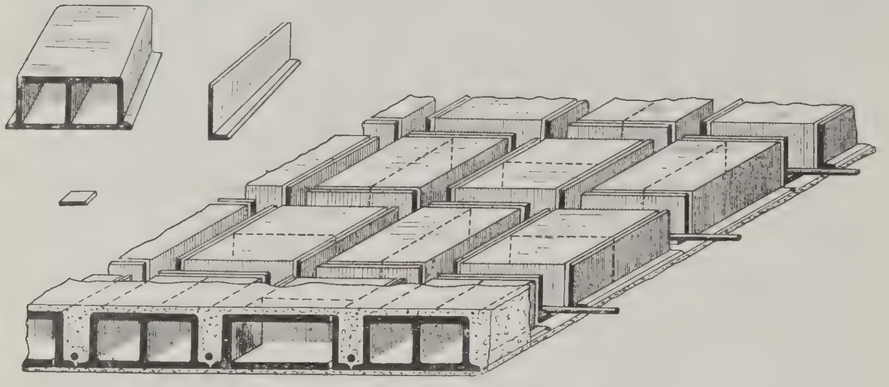


Fig. 3.—The "L" Tile.

DENTILE FLOOR CONSTRUCTION.

tile, the surrounding lip ensures the even spacing of the tiles and prevents waste of concrete.

The third type, illustrated in Fig. 3, is known as the "L" tile, and is adapted for use with a two-way system of reinforcement. Approximately the same results are obtained from this floor when complete as from that first described.

Lightness, rigidity and simplicity of construction, the fewer beams required, and the longer spans obtained, and the additional amount of head-room resulting from their use, are among the advantages claimed for these floors, the introduction of which is of much interest to architects and builders.

INSTRUCTION IN REINFORCED CONCRETE AND STRUCTURAL ENGINEERING.

Until recently no adequate course of instruction was available for students of reinforced concrete, but last winter the deficiency was repaired by the establishment of classes in this subject at the London County Council School of Building, Ferndale Road, Brixton, S.W., the lecturer being Mr. H. Kempton Dyson, the secretary of the Concrete Institute. The course was a very complete one, and the demand for such instruction resulted in a large attendance and necessitated an extension of the scheme, an elementary theory class being formed and two assistant teachers appointed. As the result of the experience last session, the scheme of instruction has been again extended and the scope enlarged for next session, which commences on September 18th. Although the London County Council made a special grant for the purchase of urgently-needed apparatus and tools for practical instruction, goods were only received late in the session, but this year many more testing appliances, tools, etc., have been added, and a more systematised course of instruction will be possible. In addition, bearing in mind that the proper study of reinforced concrete requires a knowledge of applied mechanics, and that structural engineering is becoming a specialised subject, a complete course of instruction therein has been framed, extending over four years, in which various other classes at the school have been utilised in the preliminary stages. This, while a necessary part of reinforced concrete instruction, is to be so arranged as to appeal to those who desire to obtain a knowledge of the higher theory of structures. Supplementarily, a class will be formed to give practice in the drawing and design of structures in reinforced concrete and steel, which class will be conducted on the lines of a drawing office.

The full scheme is as follows:—Elementary Course: (1) Reinforced Concrete Construction, Quantities and Practical Work—Mondays; (2) Reinforced Concrete, Theory and Design—Tuesdays; (3) Drawing and Design of the Constructional Steelwork of Buildings—Wednesdays. Advanced Course: (1) Structural Design—Wednesdays; (2) Reinforced Concrete, Theory and Design—Tuesdays; (3) Drawing and Design of Reinforced Concrete and Steelwork—Fridays. The time will be 7—9 p.m., and the session lasts about thirty weeks. The detailed syllabus can be obtained free on application at the School. The fees are very moderate, being 10s. per session (in special cases, 4s. 6d. only).

Experimental Work in Reinforced Concrete.

In connection with the above it is of interest to note the work being undertaken at the Northern Polytechnic Institute, Holloway. Two evening classes are there held, one elementary and one advanced, each course comprising about 30 lectures. The lectures are supplemented by actual design of structures, examples being always selected so as to present the solution of problems commonly met in practice. In addition, practical experiments are conducted, beams of reinforced concrete being tested to destruction. Generally a complete series of beams is made to illustrate some particular branch of the subject. For this purpose a 10-ton Buckton testing machine is available. A particularly interesting series of tests of continuous beams has just been completed, the results of which will be published shortly. Mr. Oscar Faber, B.Sc. (London), is the lecturer. The next session begins on September 20th.

CONCRETE LAMP POSTS.

A number of concrete lamp posts h been erected at Ann Arbor, Michigan, a cost, exclusive of labour and mate for making the forms, of \$7.48 (ab 31s.) per pole. The posts are 25 ft. lo 8 in. in diameter at the base, and 5 at the top, and are reinforced with f ⅜ in. steel rods, one at each corner. T weigh 1,185 lb. each. Single or b arms, bored for ⅝ in. bolts to support line wire insulators, are cast into the p at a distance of 6 in. from the top, which purpose 1½ in. by ⅝ in. by 18 steel angles are used. The lamp brac is carried on three ½ in. bolts which cast into the concrete 19 ft. from the b of the pole, and the lamps are hung 12 above the kerb. The concrete was form of one part Portland cement, two pa sand, and four parts ½ in. crushed li stone. The cement was mixed wet, a was poured and trowelled into the for The posts were allowed to set two da and then to lie on the form base for f days longer. Afterwards they were s soned for ten days before being erect

FEDERATION NEWS.

Meetings of the York Association have been to consider proposals for new rules which h been forwarded from the Operative Plumbers' sociation, and the Standing Trades Committee Master Plumbers have held meetings and h discussed the matter with a deputation of the w men, with the result that new rules have fin been approved as follows:—

1.—That each member is to receive not less 8d. per hour, 53 hours to constitute a week f March 1st to November 1st, and 47 hours the mainder of the year. Apprentices the first y after serving their apprenticeship not less than per hour.

Working hours:—6. a.m. to 5 p.m. from Ma 1st to November 1st; Saturdays, 6 a.m. to n 7.30 a.m. to 5 p.m. from November 1st to Ma 1st; Saturdays, 7.30 to 12 noon.

2.—That any member required to work for employer more than six miles from York Gen Post Office, and required to lodge from his reg home, the employer shall pay his lodgings, bus train fare to and from such job and allow the m ber to come home as follows:—From 6 to 20 m once a week, from 20 to 30 miles once a fortni from 30 to 40 miles once a month; if above miles, special arrangements to be made.

3.—That any member or members sent from city or town in which he or they are employed work in any city or town where the minimum of wages is higher than that of the city or t in which he is employed shall be entitled to the of the city or town to which he is sent to wor

4.—That any member required to work overtime paid at the rate of time and a half from 7 p.m 6 a.m. five days in the week, and from 2 p.m 12 p.m. on Saturdays. Sundays and Christmas double time. Members must not work overt night after night when there are members out work, except in cases of emergency or neces or with the consent of the employer when work out of town to assist them in the extra expense are put to in living from their homes.

5.—Any employer discharging a workman to him not less than one day's notice or pay him hours pay extra.

6.—Any workman leaving his employer to give not less than one day's notice or forfeit two h pay, to be stopped out of the wages due to hi

7.—Three months' notice in writing shall be gi on both sides of any alterations in the foreg rules, stating full particulars, and the party ceiving the notice shall reply in writing within days, either by giving a counter notice or ot wise. If necessary, a deputation of plumbers presenting the Association shall be appointed meet employers to endeavour to come to ter failing which both parties shall refer the ques back to their respective general meetings and pose arbitration, and if the majority of both are in favour of arbitration then a Court shall formed as follows:—

Court of Arbitration.—The Court shall consist employers and plumbers representing this asso tion who shall have power to come to terms whose decision shall be binding on both part but if unable to agree they shall proceed to app an umpire to be mutually agreed upon who s act as sole referee, and whose decision shall the decision of the Court, and shall be equ binding on both parties.

The rules were finally approved and passed above by both parties, and have been signed representatives of employers and operatives, countersigned by the president and secretary of London Executive Council of the United Opera Plumbers' Association.

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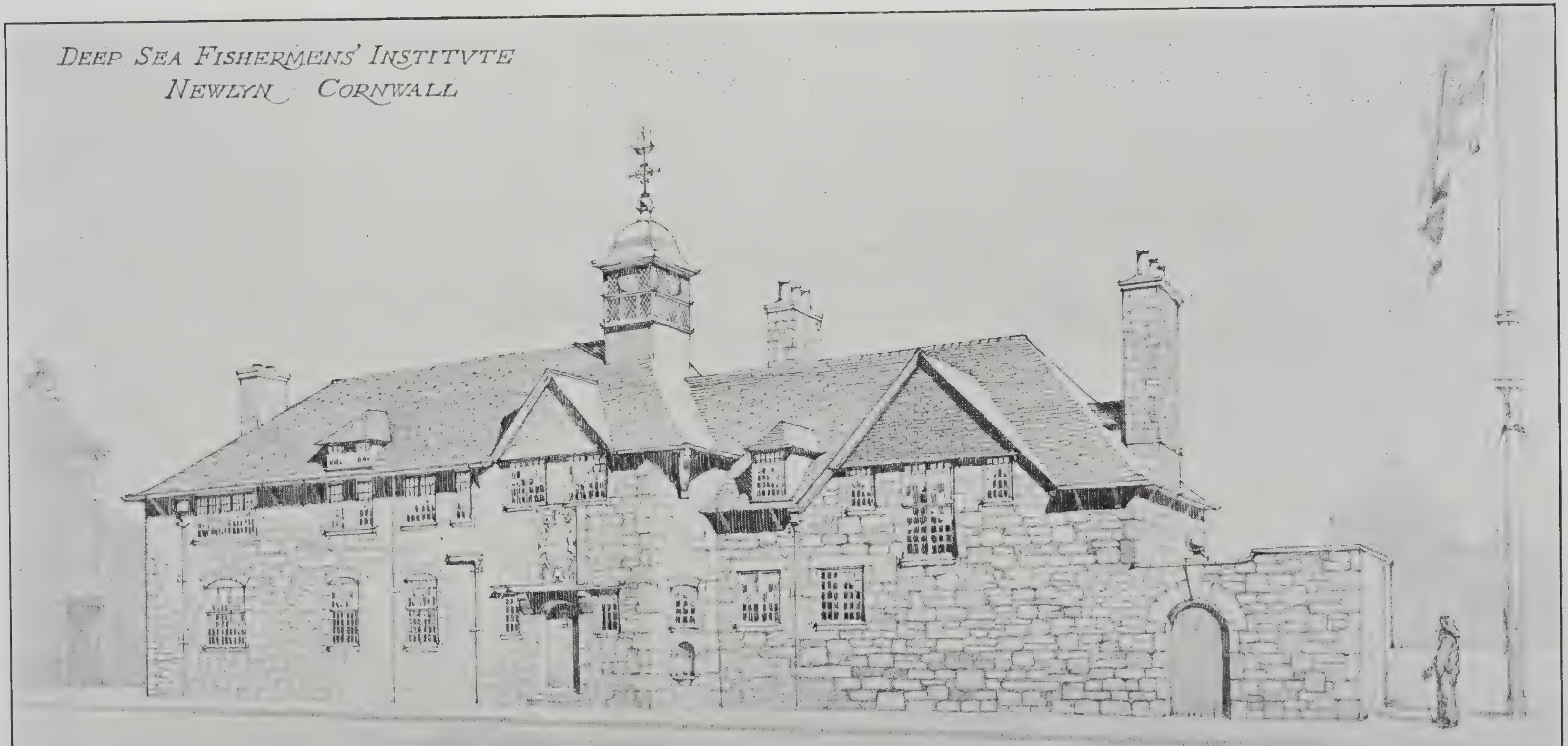
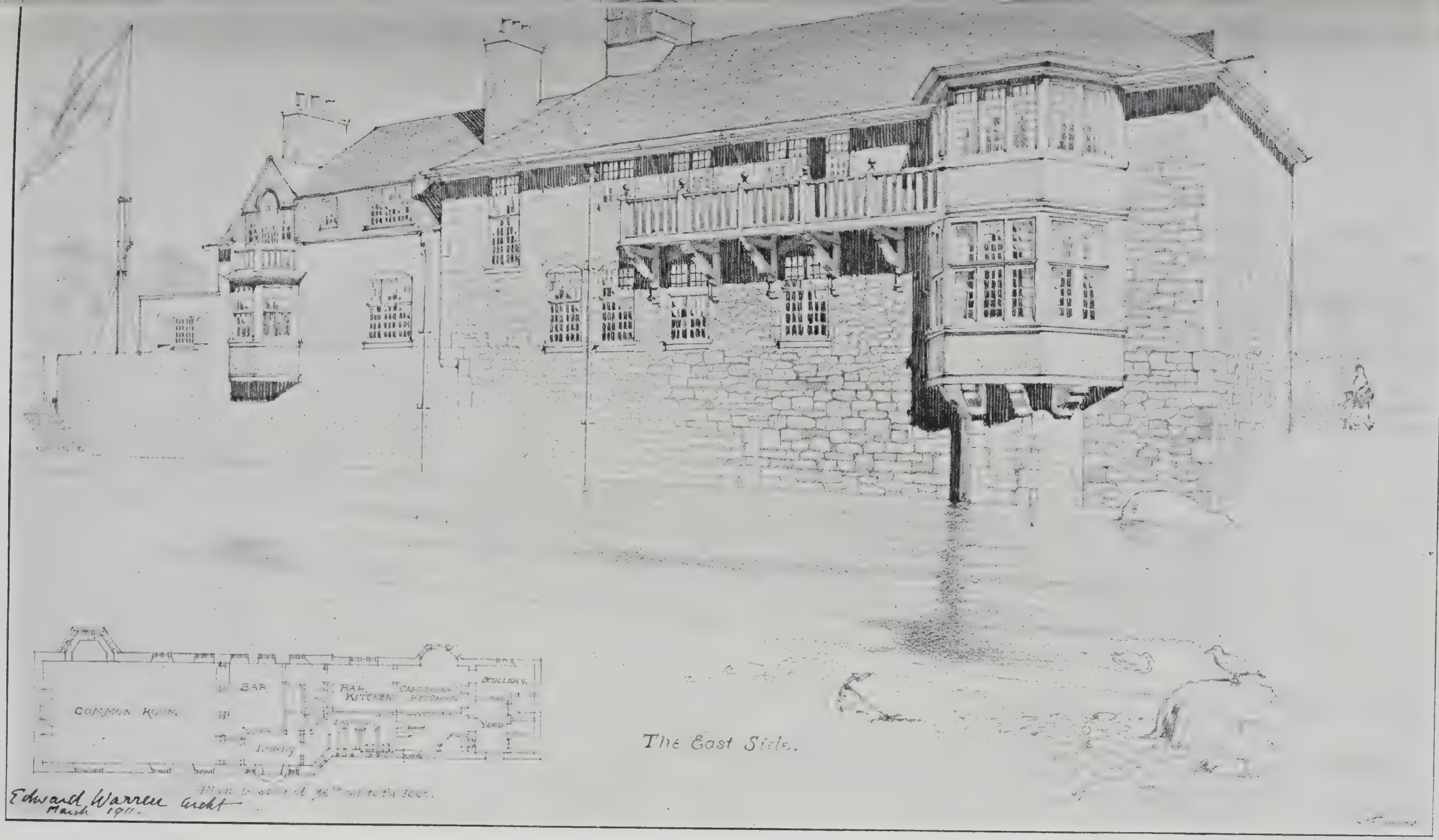
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, September 20th, 1911.*



DEEP SEA FISHERMENS' INSTITVTE
NEWLYN CORNWALL

The West Front.



EDWARD WARREN, F.S.A., F.R.I.B.A., ARCHITECT.

(Royal Academy Exhibition, 1911)

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THE ARCHITECTS' &
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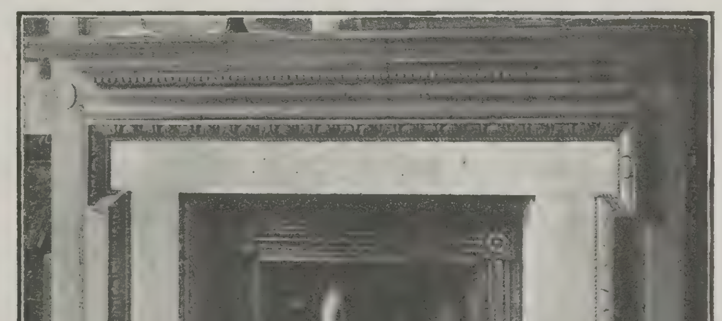
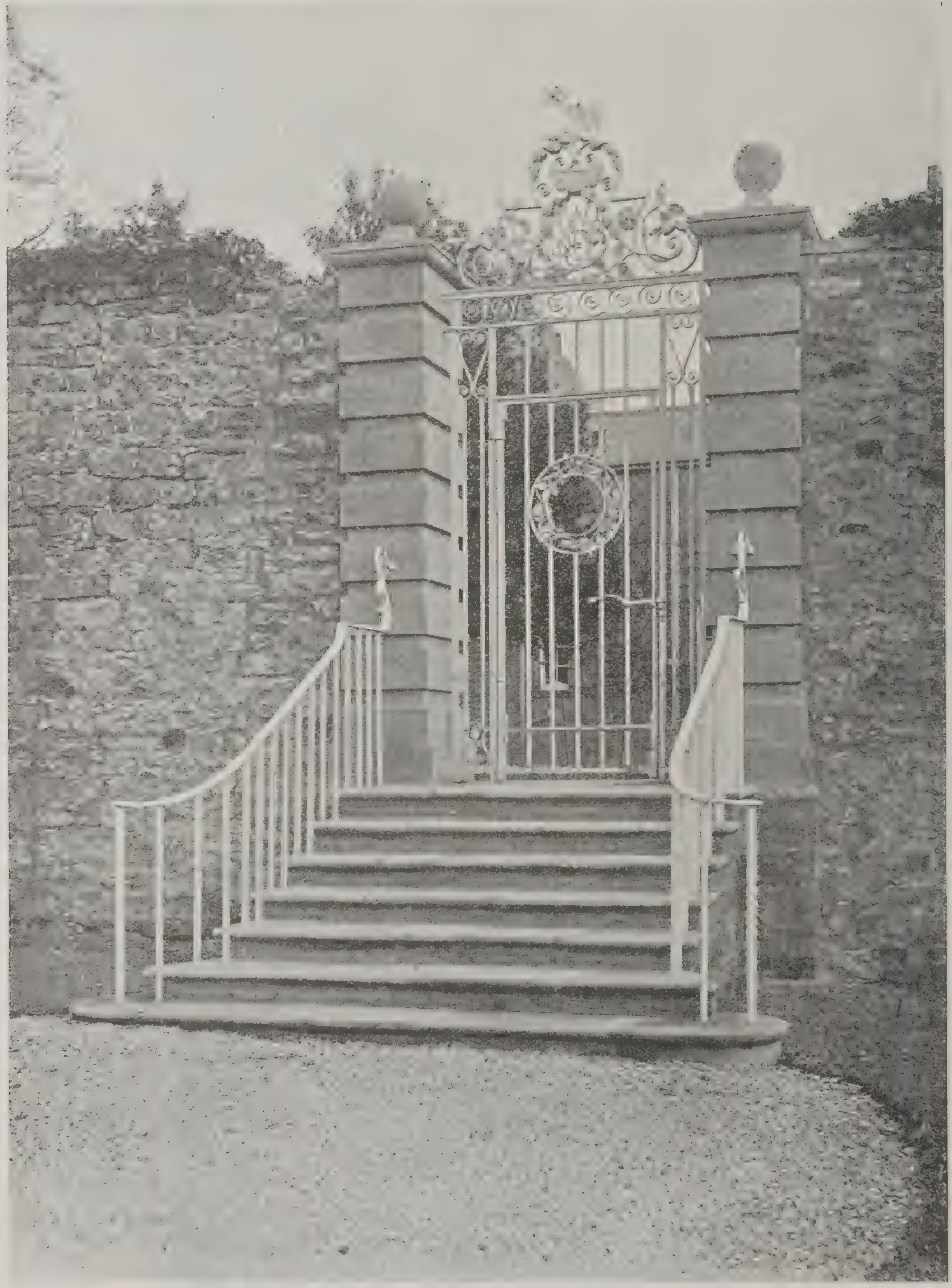
WEDNESDAY,
SEPTEMBER 20th, 1911.

Volume XXXIV. No. 869.



CHIMNEYPIECE IN A HOUSE IN MONTPELIER ROW, TWICKENHAM.

(See "Old Brick Houses at Richmond and Twickenham," page 297.)



WROUGHT-IRON GARDEN GATE, NEWBROUGH HALL, FOURSTONES-ON-TYNE, NORTHUMBERLAND.
F. W. DEAS, F.R.I.B.A., ARCHITECT.

A fine example of modern smith's work.

THE ARCHITECTS' &
BUILDERS' JOURNAL.

SEPTEMBER 20th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 869.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

The Report on the Victoria and Albert Museum.

SIR CECIL SMITH'S Report on the Victoria and Albert Museum for 1909 and 1910 has been issued in the form of a Blue-book under the Board of Education Department. It is in three sections, the first dealing with matters which concern the museum as a whole; the second contains detailed reports of the different departments with a statement of the principal accessions to each of the collections by donation, bequest, or purchase; while the third section contains a report on the circulation division of the Museum.

In the first section some very important subjects are discussed. An interesting comparison is made with similar museums abroad, of which the Louvre only competes with the Victoria and Albert in extent. It is pointed out, moreover, that most of the larger museums on the Continent are general museums of art, intended for the enlightenment of the public (a phrase which perhaps practically means that they become places of public amusement), and are not designed to meet the special requirements of students of industrial and decorative art. This, which was the original object of the South Kensington Museum, is now kept steadily in view; although, as is well known, there are on the upper floor several galleries of pictures, which found a home there from time to time as bequests, and which can hardly be disestablished now. Nor would there be any practical reason for doing so, as for the present the museum, as now so greatly enlarged, has at its command a great deal of unfilled space. We have always regretted, however, the dispersion of the splendid series of casts from ancient sculpture which formerly filled one of the large halls of the old museum, and which afforded the only opportunity in London for drawing from the antique on a large scale. Such drawing is really an important part of the training for high-class design in applied art, and therefore the opportunity afforded for it was by no means out of keeping with the general objects of the museum; but the late Professor Middleton, who seems to have had rather narrow views on these subjects, turned out all these casts into what is now the ironwork corridor, where there was no proper light to draw from them, in order to fill the room with Persian textiles, on the ground that the carpets were genuine work, and the casts only reproductions. These casts have now, we understand, been sent to the British Museum, but we presume no longer exist as a complete collection for the comparative study of antique sculpture. We have always regarded the dispersion of this collection of casts from South Kensington as a mistake.

The question whether the arrangement of specimens of art-work should follow a grouping according to historical periods or according to material is, as the Report fully admits, a very difficult one. We learn that on the Continent generally the historical method is preferred, Vienna and Stuttgart being exceptions in favour of the "material" system. It is a question for which class of students the arrangement is intended. Those who wish to study the history of artistic development in different countries would naturally prefer the grouping in regard to chronology; and even in that case the problem would not be a very simple one, since to make it complete there would have to be a separate chronological arrangement for each country which could be considered to have a definite school and history of its own. On the other hand the craftsman, the worker in any special material, would be best assisted by a grouping together of all the objects executed in that material; and as the education of the craftsman is professedly the main object of the museum, the decision to group objects with reference to material seems on the whole to be the right one. The student of general art development is put to the slight inconvenience, in that case, of going from one department to another and comparing notes; after noting what the French did in ironwork in one century he would have to say, "now let us see what wood-carving was doing at that time in France," and would have to betake himself to the wood-carving department. But in general the historical art-student is probably better able to make such comparative analyses than the craftsman would be; it is much simpler for the latter to have all the work in one material under his eye at once. We may quote the passage from the Report giving the reasons for the decision of the Board on this very important principle:—

> "The decision of the Board in 1908 to arrange the Victoria and Albert Collections according to material, and the correlated decision to establish eight separate departments, were in accord with the avowed primary aim of the Museum, that of providing facilities for craftsmen and students. It seems reasonable to suppose that what these chiefly look for in such an exhibition is an assemblage of typical specimens of their particular craft, arranged, it may be, according to locality and period, but not assorted with specimens of other crafts: they further require to be furnished with all the available information about the work they are studying, and in some cases the advice of trained experts. It follows naturally, then, that the museum official in such a case should be an expert specialist trained as far as possible in one particular branch; he should thus be in a position to advise on the one hand the student, and on the other the purchasing authority in the acquisition of the most suitable objects for this purpose. For these reasons it seems that the departmental system of organisation is in the case of the Victoria and Albert Museum the most natural one."

The objects are classified under eight main departments, viz.: Architecture and Sculpture; Ceramics, Engraving, Illustration and Design; Metal-work; Paintings; Textiles; Wood-work; and the Indian Section. The Library makes a ninth department. The first is, of course, one of the most important departments from our point of view, and is one which, from the size of many of the objects, naturally occupies a very large space in the building. In this respect the great West Hall of the new building is a most important acquisition; enabling many of the large examples of architectural style and detail to be placed so that their effect can be fully seen. The objects most studied are the English architectural exhibits in the West Hall and the casts of English and French Gothic architecture in the Square Court. Among the contents are a series of doorways obtained from houses in Great George Street and Delaney Street, demolished in the early part of last year; these are presented by the Office of Works, and "are more continually measured and studied by architectural students than any other exhibits in the department."

Experiments have been made, it is said with success, in the exhibition of stained glass design by artificial illumination at night; and it is proposed to extend this method to all the stained glass exhibits in the museum.

In regard to the Art Library, we may notice one defect which special circumstances have brought to our knowledge. The Library possesses a very large collection of architectural photographs, kept in portfolios or boxes labelled according to town and country. These, if complete and systematically selected, would be most valuable to architectural students; but they appear to have been got together too much by accident and not by special and expert selection. Saracenic architecture, both Eastern and Spanish, is very largely illustrated; there is a fair amount of French Gothic and Renaissance, though not systematically selected or arranged; and in the German collection we come occasionally on a number of photographs of some church or other building of very secondary importance, which gave the idea that they had been bought simply because they happened to come to hand; while buildings of much greater architectural importance are not represented at all. This collection of architectural photographs ought in fact to be weeded, and the important defects filled in, under expert architectural advice.

The question of the treatment of important bequests of collections is rather a difficult one. In most cases the original owners, in making the bequests, stipulate that it should be kept together as a separate collection. To do this is in most cases lessening the value of the bequest to the museum, as the various objects would be of more utility to students if grouped with the other objects of the class to which they belong. It is a natural wish, however, when a man has spent many years of his life, and a large fortune, in collecting objects of art, and leaves the whole collection to the nation, that his memory should have the credit of it. In the case of one of the largest and most important bequests, that called "the Jones collection," the objects were so restricted to one French period which had interested the collector, that there was some artistic and historical suitability in keeping the collection intact. Some portions of the Salting bequest, also, offer such important and almost unique illustration of special classes of objects that they are perhaps more valuable collectively than dispersed into different departments. But the subject needs consideration, for if the habit of bequeathing, under the stipulation of keeping the collection separate, developed and was accepted, the museum might find itself becoming the permanent storehouse of a series of private collections, not all of equal value.

The question of purchasing modern work is another point that may have to be considered. At the Stuttgart Museum, we are told, the practice that formerly obtained of buying modern objects has been abandoned, "for the reason that the objects of this kind purchased for the museum 25 years ago are now considered ugly." Amid the rapid changes and chances of mortal taste that is not unlikely to be the case; but where is the line to be drawn? After what date are things too modern to purchase? The Munich Museum buys nothing later than 1800; a good period to stop at if the test of time is to be the one adopted. But we are inclined to think that exceptionally good modern work, especially if it formed a good example of technical execution, might justifiably be purchased occasionally, especially if it illustrated some technical method not illustrated in any old work. And on the other hand we would certainly enter a *caveat* against work being considered worth purchase merely because it is before an arbitrarily selected date. Things should not be purchased unless they are good, whatever their date. It would not be difficult to find a certain number of exhibits at the museum which are not good art, and which have no recommendation except their age. Ancient work, if it is to be included in a museum as a model for students, should be selected with as severe critical care as if it were modern.

The Fireplaces at Tattershall Castle.

THE need for watchful care and protection of our ancien buildings is exemplified in the case of Tattersha Castle, Lincolnshire. The existing part (which re placed the keep of the original castle) was erected by Ralph Lord Cromwell, Lord Treasurer to King Henry VI., abou the years 1433-1443, and is, probably, the finest specimen o medieval brickwork in the kingdom. It is also particularl remarkable for the beauty and heraldic interest of its fou fireplaces, which give practically a history of the owners an builders of the castle from the earliest times. It is believe that these fireplaces were carefully studied by Pugin whe he was designing the internal decorations of the new House of Parliament; plaster of Paris models of them are on vie in the South Kensington Museum.

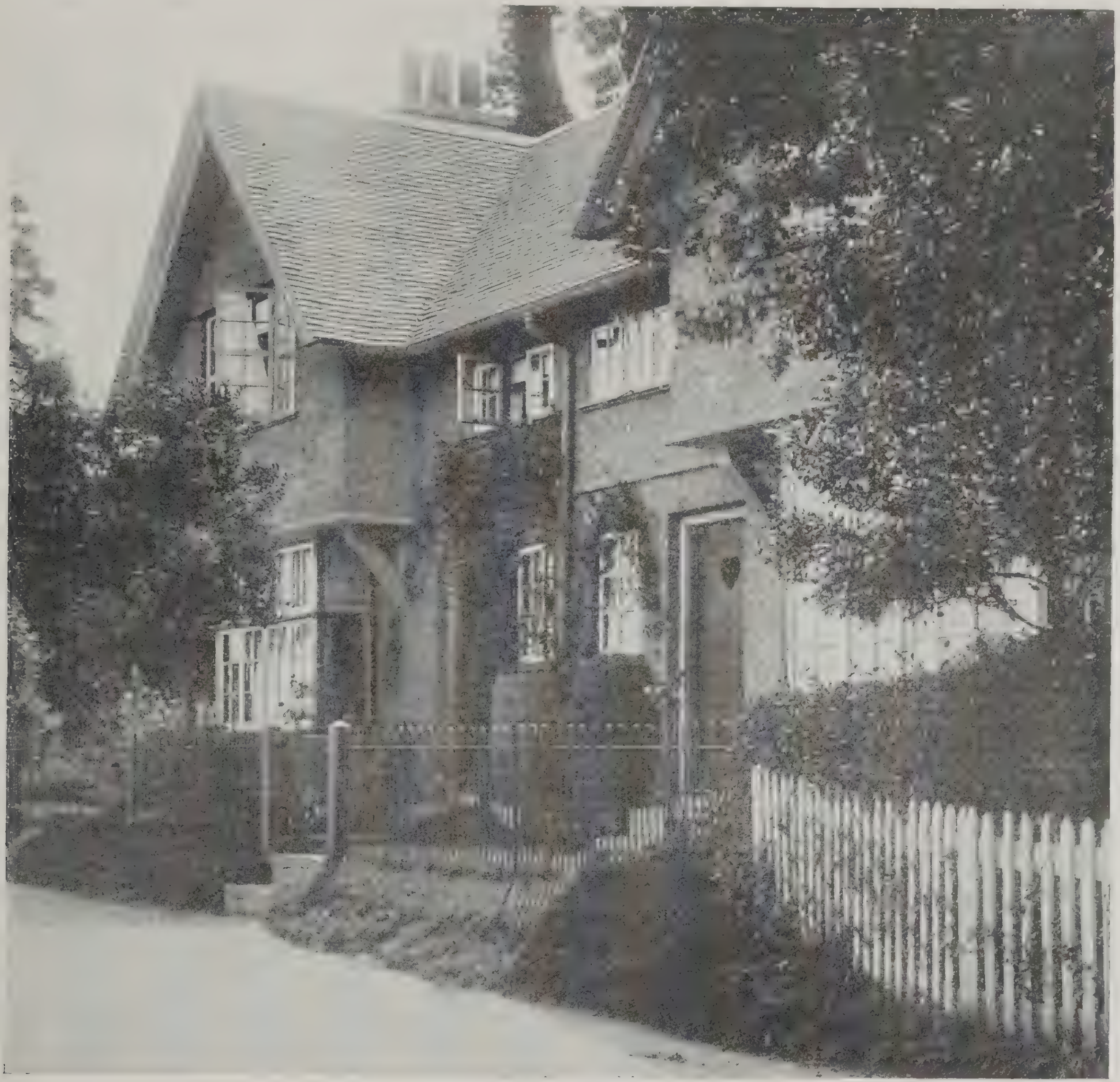
No little consternation, therefore, has been aroused by thei reported removal from Tattershall Castle; although, fo tunately, this act of vandalism has been partly frustrated b Sir Francis Trippel's generous loan to the National Trust o £5,000 for the preservation of the fireplaces and of the histori building which they adorn. Unfortunately, however, th intervention of the National Trust appears to have been to late to prevent the displacement of one fireplace and considera able damage to others. According to the Boston corresponden of the *Times*, the fireplace which has been removed is situate upon the third floor. It is a delicate architectural compositio carved with the heraldic devices of the Lord Treasurer Crom well and his family. When removed, it came away in frag ments, and its reconstruction, it is feared, will prove a matte of considerable difficulty. In any case, its original beaut has been completely ruined. The fireplace on the second flo has been forced from its setting by the workmen, who hav inflicted no little damage upon the delicate stonework and th surrounding brickwork.

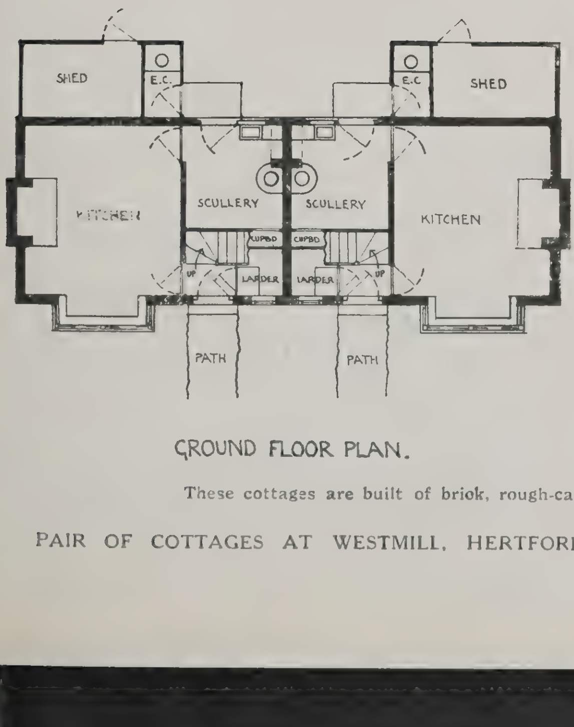
In a letter to last Saturday's *Times*, Colonel Henr Knollys gave an alarming account of the destruction that ha been wrought when he visited the Castle last Thursday. "I some places," he wrote, "the fillet-mouldings have bee splintered off, and there are some lamentable cracks and spli in the main stones. As for the brickwork, in numerous plac it has been crowbarred out for scaffolding purposes, and th rifled fireplace caverns are a gruesome sight in their hug ugly, squalid vacuousness. Some of the old Dutch brickwor hitherto defiant for nearly four centuries, has been topple into rubble, and the general aspect of the place is one deplorable demolition and desolate devastation." Presumabl Colonel Knollys's visit to the Castle was made at a differe time from that of the newspaper correspondent, as the tw accounts differ to a material extent; Colonel Knollys statin that three of the fireplaces had been prised out of their dee brickwork niches, and that two others were piled in pieces the ground. It is reasonable to suppose, therefore, that th work of restoration, which the firm who had bought the fir places guaranteed to undertake, had already been commence when the newspaper correspondent subsequently visited th Castle. Lovers of historical architecture may well tremb for the safety of our national art treasures; had interventio been delayed another twenty-four hours, it is stated, th damage sustained by the fireplaces would have been practicall irremediable. The price asked for the fireplaces by th vendors is £2,800; and Canon Rawnsley, acting on behalf the National Trust, invites all who are interested to co-opera in raising the necessary amount. The National Trust accepte Sir Francis Trippel's offer only on condition that no person liability was incurred, the Castle being given over as securi for the loan.

Although the extensive mutilation suffered by these histor fireplaces is a matter for keen regret, we may yet rejoice tha their wholesale removal, perhaps to another country, has least been prevented.

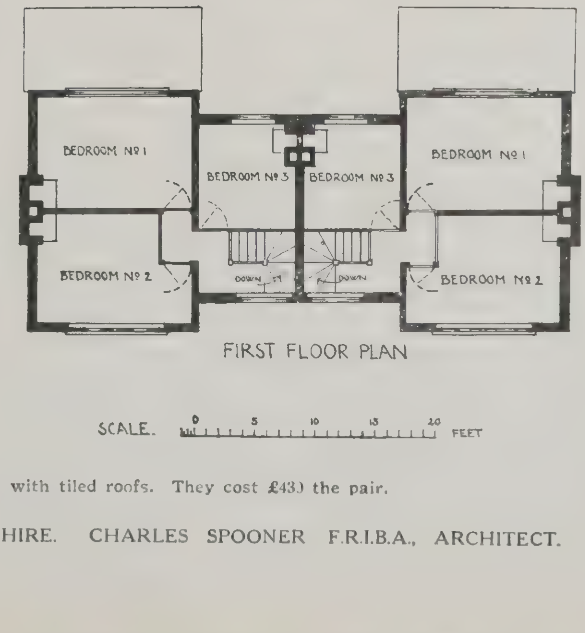
Ford Madox Brown and the Pre-Raphaelites.

AN exhibition of Pre-Raphaelite pictures at Manchester was opened last week by Mr. Arthur Hughes, one of the survivors of that noble little army known as the Pre-Raphaelite Brotherhood. Mr. Hughes said that he had a happy acquaintance with the Pre-Raphaelite Brethren, beginning very shortly after the appearance of those mysterious letters P.R.B., which accompanied the signature on the pictures exhibited in 1849. Critics had been good enough to associate him with the group, but he was a little younger than they, and never one of the Brotherhood. It was a far cry back to 1849, but Hunt and Millais exhibited earlier still. Hunt had a subject from Sir Walter Scott's "Woodstock" and Millais one from Saxon History in 1847, and Hunt again exhibited with a very admirably invented picture from "The Eve of St. Agnes" in 1848. In looking back at what had always worn





GROUND FLOOR PLAN.



FIRST FLOOR PLAN

SCALE. 0 5 10 15 20 FEET

These cottages are built of brick, rough-cast, with tiled roofs. They cost £430 the pair.

PAIR OF COTTAGES AT WESTMILL, HERTFORDSHIRE. CHARLES SPOONER F.R.I.B.A., ARCHITECT.

to him an aspect of romance, there appeared to have been influences at work that in some degree seemed to account for a fresh development or awakening in art. Two exhibitions held in Westminster Hall of cartoons first and paintings after in competition for the selection of artists to decorate the Houses of Parliament revealed new men of great talent. Among the exhibitors of cartoons there appeared the astonishing Millais, little more than an infant, with the "Widow's Mite"; and Madox Brown showed his "Finding the Body of Harold." When three such minds as those of Rossetti, Millais, and Hunt, so trained and so diversely and wonderfully gifted, met, it was no wonder that some lightning coruscated. They renounced the artistic convention of the day, and went back to the almost forgotten simplicity which they saw in the works of Giotto and Fra Angelico. And thus on truth and simplicity was founded "Pre-Raphaelitism." Than Madox Brown there never was a man more gifted with the faculty of design, intensely original, and of the most gloriously dramatic quality.

Architecture at the London Salon of Photography.

SOME remarkable examples of the art of the camera figure in the London Salon of Photography, now open at the galleries of the Water Colour Society, 5a, Pall Mall East. The object of the Salon exhibitions, as expressed in the catalogue, is to encourage those in whom individual aim and feeling have found expression by means of the camera. There are over two hundred pictures in the galleries, but these are only a tithe of the number which were sent for selection by photographic workers the world over. Many of the workers are notable for their unconventionality either in subject or treatment. A large number of the pictures exhibited have an architectural motif, but cathedral studies are few. The repairing of Winchester cathedral has been seized upon by Mr. C. David Kay for a pictorial effect; Pierre Dubreuil shows Notre Dame de Paris in quite a new setting, and Mr. F. H. Evans has a part of the north porch of Chartres. A cruder modern architecture is not left alone by these advanced workers. Mr. John H. Anderson has taken for his subject Cannon Street railway station, Dr. Evershed has not been blind to the beauty of Lambeth Bridge, and Mr. Hector Murchison has made a picture out of the chimneys of the Adelphi. Several Salon evenings have been arranged, one of the lecturers being Mr. Arthur Marshall, A.R.I.B.A., who will deal "With a Camera in Holland," Friday, October 13th, at 8 p.m. Mr. Marshall also contributes a Venetian study to the walls of the exhibition.

The First Egyptian Builders.

NEW light on Egypt and its people is always forthcoming, and gradually the complete record is being obtained. Some further facts were presented recently by Dr. G. Elliot-Smith, F.R.S., in the paper on "The Foreign Relations and Influence of the Egyptians under the Ancient Empire," which he read before the British Association at Portsmouth.

The people of Upper Egypt, said Dr. Smith, discovered copper in early Pre-dynastic times, and during the succeeding centuries slowly learned to appreciate the magnitude of their discovery. In late Pre-dynastic times they were casting formidable metal weapons, which enabled them to unite the whole of Egypt under their sway. They pushed their way beyond the frontiers of Egypt as they told us in their own records—to Sinai for copper-ore, and to Syria for cedar from the Lebanons, as well as to the south—and they met and intermingled with the Armenoid population of Northern Syria, who acquired from them the knowledge of copper and its uses, while the Egyptians themselves took back into Egypt in their own persons ample evidence of the existence of an Armenoid population in Syria before 2,800 B.C. Before this time the Armenoids had been trickling into Neolithic Europe without, however, making much impression upon the customs or the physical traits of its population; but once they had acquired metal weapons from the Egyptians they were able to make their way into Europe by force and to impose their customs upon her people, in virtue both of their numerical strength and the power they wielded from being better armed. In Egypt itself the Proto-Egyptians in Pre-dynastic times had learned to make not only weapons of war, but also tools of copper. The skill they acquired in using these tools made them expert carpenters and stonemasons; and during the early dynasties they ran riot in stone, creating the vastest monuments that the world has ever seen. The knowledge of these achievements spread amongst the kindred peoples on the southern shores of the Mediterranean, to the neighbouring isles, and to Southern Italy and the Iberian Peninsula. But it was the knowledge of the various kinds of monuments that the Egyptians were building and not the skill nor the skilled workmen that spread; and, as a result, at the time of the Sixth Dynasty or thereabouts the fashion of building stone monuments, dolmens, menhirs, cromlechs, rock-cut tombs, etc., began to spread amongst the kindred peoples, not only on the west, but also on the east of Egypt.

New Slade Professor of Sculpture.

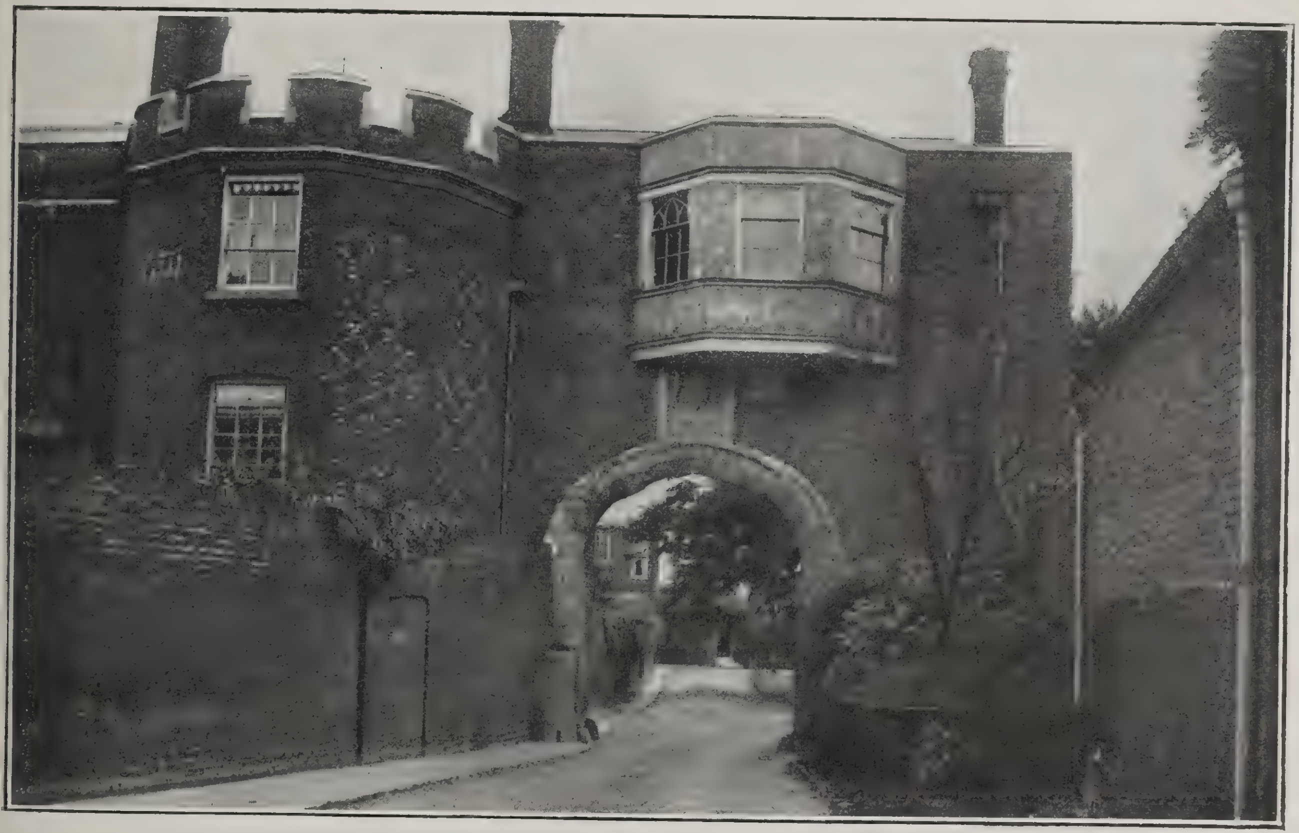
MR. HAVARD THOMAS, the well-known sculptor o Lycidas (recently presented to the Tate Gallery by Professor and Mrs. Sadler), has been appointed Instructo of Sculpture at the Slade School, University College, London He will begin his courses next month. Among younger artist and advanced critics the news will be particularly welcome. S far as drawing and painting are concerned, says a writer in th "Morning Post," the Slade School, under the direction o Professors Brown and Tonks, has earned a deserved an world-wide reputation for the system of teaching practise there. The old reproach, brought with some justice by Frencl critics against the deficient draughtsmanship of the Englisl School has been entirely removed. The once indispensabl sojourn in Paris ateliers has long been dispensed with by artist who have had the advantage of a Slade education. And th election to the Academy of some of its brilliant pupils is a eloquent fact that requires little comment. English sculptur has not, however, made the same progress or showed simila potentialities for development as the sister arts of paintin and drawing. A few individual sculptors of excellence do not alas, constitute a school. But under the direction of Mr Havard Thomas there is no reason to doubt that a Schoc of English Sculpture will be established on as firm and en lightened a tradition as that initiated by Professor Tonks an his colleagues in the domain of painting and draughtsmanshi

Some Fine Old Brickwork and Woodwork.

SOME fine specimens of seventeenth-century brickwork and woodwork have been revealed in the demolition o premises at 9, Paternoster Row, occupied since 186 by Messrs. S. W. Partridge and Co., publishers, who ar migrating to Old Bailey. Though modernised in parts fror time to time, the building now being pulled down dates i the main from 1668. The vaulting in the foundations i believed to be anterior to the Great Fire of 1666, and it i thought that many of the old bricks were used again whe the premises were rebuilt in 1668. In the construction liberal use was made of huge timber beams. At first glanc they look like oak, but they are really "Russian fir." The are remarkably sound and strong, and must have had a fa longer seasoning than is usually given to timber nowadays Little is known of the history of the building before the middl of the nineteenth century, and the "house-breakers" have nc so far discovered any relics of antiquarian interest, unless be a button that bears a portrait, in relief, of the Emperc Nero.

OLD BRICK HOUSES AT .ICHMOND AND TWICKENHAM.

TO think of the Strand as a muddy path between bramble bushes and the Embankment as a meandering walk by the side of a rural Thames requires considerable ort of the imagination; and it is similarly strange to conceive e riverside lanes at Richmond and Twickenham as thorough- res of a great city, the trees gone, the air tainted, and ectric cars speeding along where once the quiet barge horse wed his gaily-painted craft; yet the first has been, and the cond in all probability will be. For Richmond is scarce n miles from St. Paul's Cathedral, and as the giant octopus London throws its restless arms ever farther, the fields come enveloped in the deadly embrace. That fact means uch. It means that the appearance of Richmond, its reets and houses, has been changed; that the cockneyizing ement spreads apace; and that large houses stand empty, eir former tenants flown to higher reaches of the river, aches yet unspoiled by the proximity of a vast city. The quent fate of these mansions is demolition at the hands of e speculating builder, who will erect small uninteresting uses in the grounds. But here and there among the modern ildings are fragments of a century and more ago, old brick uses overgrown with creeper, unpretentious, dignified, rest- houses in quiet contrast to the bizarre all around them.



GATEWAY TO "THE OLD PALACE," RICHMOND.

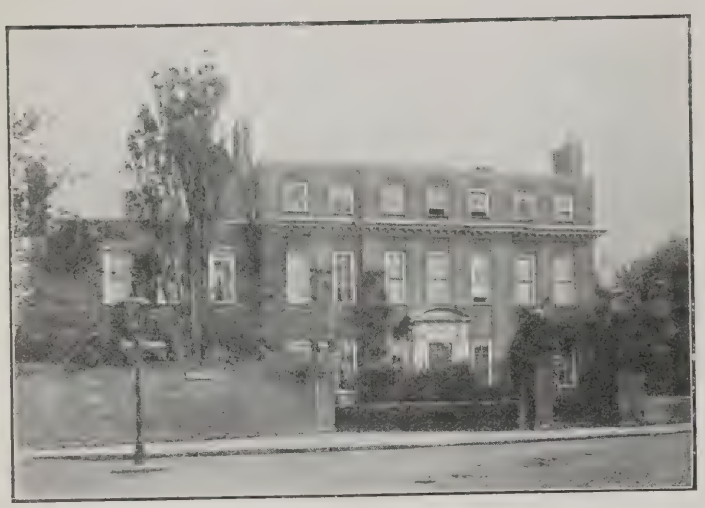
The town proper lies at the foot of the hill, that vantage- ound whence one may look down on a world-famous view woodland and meadow with the River Thames shining e a spangle on the grass. Not for that view alone. for the general sylvan beauty of the place, Richmond cyed five centuries of royal and distinguished patronage. rmerly its name was Sheen (meaning beautiful, bright, ning, from a Saxon derivative), and one part of it is still led so; but it was Henry the Seventh who gave it his own ne, Rychemonde, the name of the Yorkshire town from ich he received his title before ascending the throne.

As one writer has put it, imagine to yourself a tolerably-sized, rudely-constructed manor-house; some thirty rudely built cottages, or rather huts, inhabited by hewers of wood and drawers of water; imagine a long procession of a King and court, heralds and men-at-arms, servitors and pages, threading along the old road through Mortlake and passing these hovels, the owners of which run from the fields, and their wives from their baking on iron plates, to follow it to the manor-house: a little braying of horns, a good deal of trouble with the emblazoned banners, and much clanking of accoutrements and arms; and then you have a picture of Sheen in the days of Edward the Third (1312-1377), when first it became a place of note.

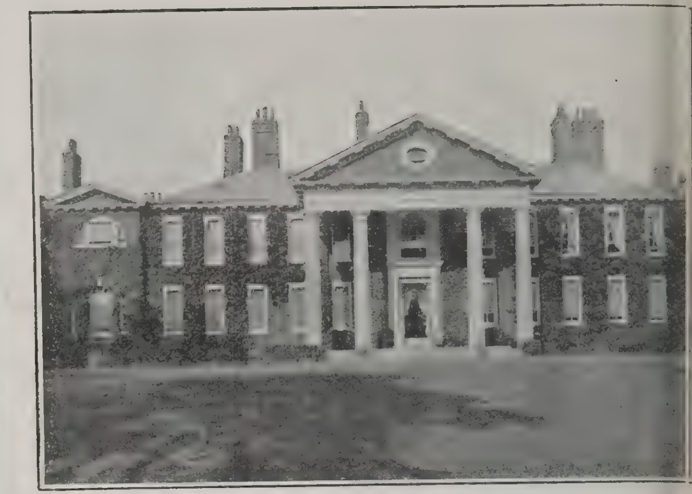
Ever afterwards, up to comparatively modern times, it remained a favourite resort of the court, the nobility, and distinguished persons in all stations of life; some brief reference to whom will be made later.

Perhaps the most suggestive piece of brickwork in Richmond is the fragment of the old Palace and its gateway, which seems to have been the entrance to the wardrobe court. It is said that Edward the Confessor built a palace at Richmond, but fire and time utterly destroyed that building, and also the several succeeding royal houses which occupied the site; so that this gateway and the little building within alone remain as a relic of the palace which Henry the Seventh built—"that magnificent mansion where Henry the Eighth had entertained right royally Imperial guests; where Queen Elizabeth had loved to retire her dignity from the pressure of affairs of state; the residence Prince Henry adorned with the taste of a Francis and the splendour of a Medici; whose corridors had been familiar with the dignity of Wolsey, the wisdom of Burleigh, the gallantry of Essex, Sydney, and Raleigh; and whose presence-chamber had been illumined by the beauty of a dozen successive generations."

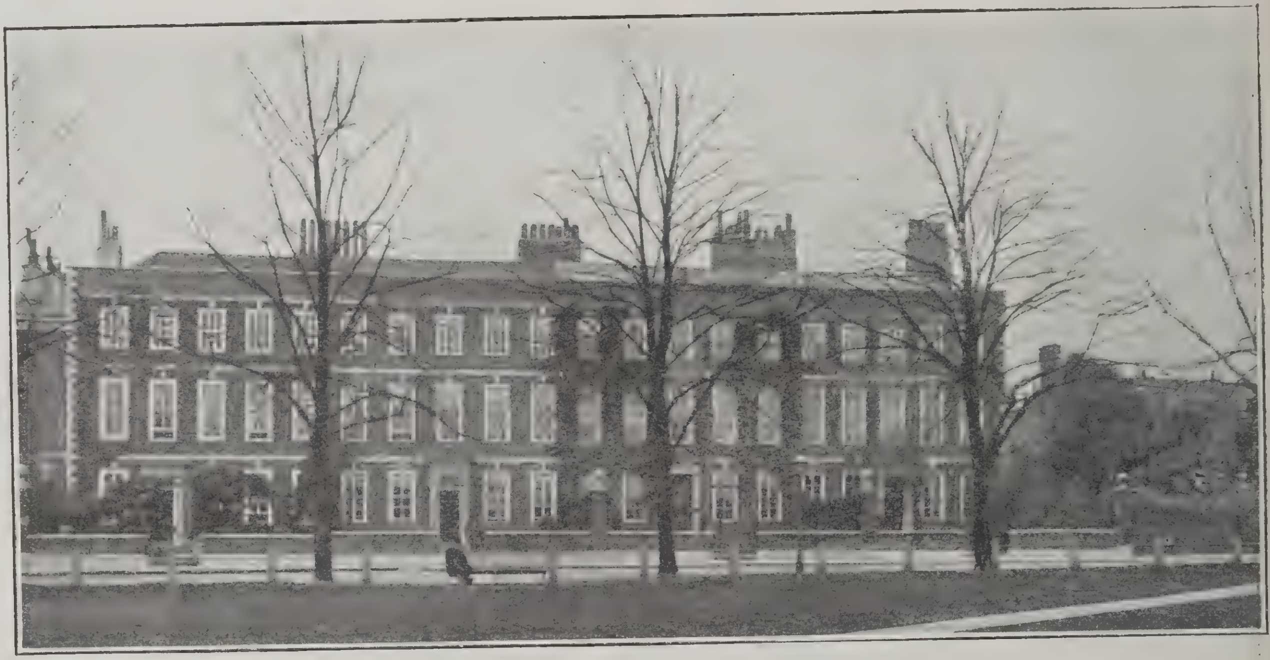
The palace grew sadly dilapidated under Cromwell, and eventually after a life of vicissitude (Strype in 1720 speaks of it as "now decayed and parcelled out in tenements") fell into utter ruin.



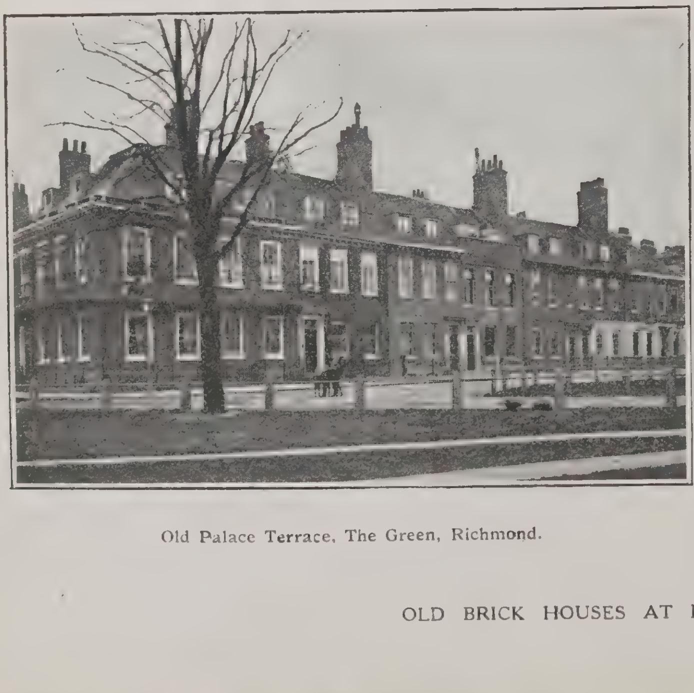
Rutlard Lodge, Petersham.



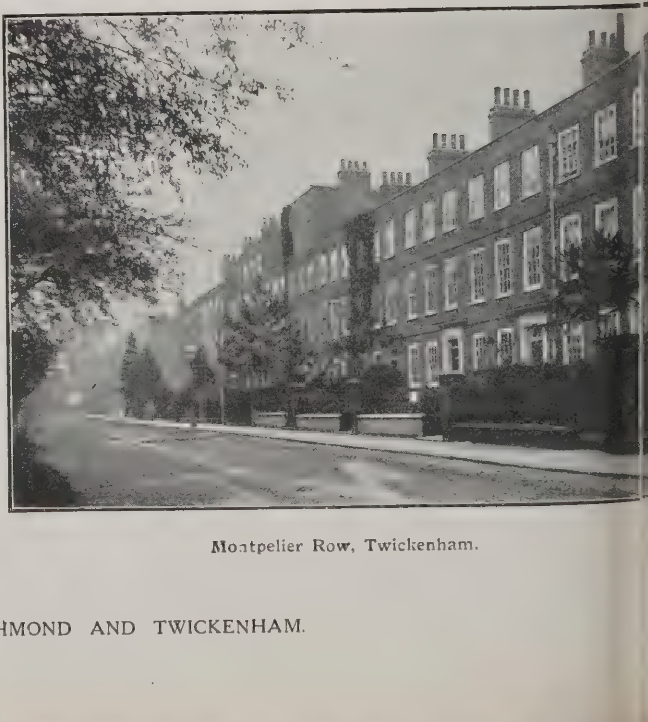
Garden Front of "The Trumpeting House," Richmond.



Maids of Honor Row, The Green, Richmond.



Old Palace Terrace, The Green, Richmond.



Montpelier Row, Twickenham.

OLD BRICK HOUSES AT RICHMOND AND TWICKENHAM.

The gatehouse is of red brick, weathered to a dull colour, ith bluish bricks for the pattern work so characteristic of dor architecture. The stonework of the arch at the front is y much eaten away, and at the back is a newer relieving ch. Over the front are the royal arms of England, with the agon and greyhound for supporters, as borne by Henry the venth. The gatehouse faces the Green—that delightful ture of old-time England—whereon tournaments, jousts, s, games, and other festivities took place. It has been paired within the last ten years, and some attention given the little bay window. The story goes that in the room to ich this window belongs Queen Elizabeth died—of small-x, as is well known; but there is no absolute authority for statement, and it would seem much more probable that death took place in another and larger part of the palace.

Just inside the gateway is a small range of buildings (unbtedly of Tudor date) which are especially interesting having had very little done to them in the way of toration. It seems that only such necessary works of pair as repointing the brickwork, putting new tiles on the of where needed, and painting afresh have been carried out the exterior, while inside the woodwork, including a fine ircase, remains practically in its original condition.

At the lower end of the little courtyard to which the gateway es access is a building often spoken of as the "Old Palace," t in reality "The Trumpeting House," its name being rived from two stone figures of boy trumpeters that stood either side of the entrance. They are now in the garden. e house was built in the time of Queen Anne, who died in 14. It is a very delightful example of what has come to called early Georgian work, carried out, like most of t work, in warm red bricks with the flat arches over the ndows in bricks of a brighter tint, forming a pleasant trast. The roofs are covered with slates which have athered to a beautiful silver-green colour, and with the ite-painted wood cornice and window frames the whole ms a very charming composition. The entrance from the rtyard is by a small octagonal hall. On the opposite front, main front, facing the river, is a large pediment carried by r Tuscan columns in stone, the tympanum being filled in th brick. The details do not call for any comment, but rhaps it is worth while referring to the modern sunblinds, ich might have been treated more squarely at the head in eping with the rest of the house; it is just in small matters this kind that modern additions and alterations often mar l buildings. The "Trumpeting House" has a beautiful vn running down towards the river, bordered by many fine es, and in the grounds is an old archway with a finely ught iron gate, probably of the time of Henry the Seventh.

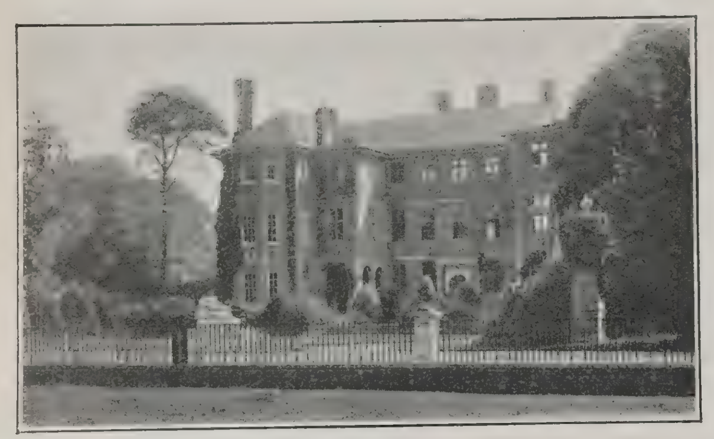
Adjoining the Old Palace gateway is "Maids of Honor w," consisting of four large brick houses built about 1703 King George the Second and Queen Caroline, when Prince l Princess of Wales, to provide accommodation for the ies of the court. In No. 4 lived John James Heidegger, ster of the revels to George the First and Second, and he d there in 1749. He was a Swiss and came to London in 8. These houses, then, which form "Maids of Honor w" are Georgian, with which period we are mainly con-ned for the present, and in considering them it is opportune draw a few comparisons. Georgian architecture has been subject of much abuse. Men in the vanguard of a Gothic vival, inflamed beyond measure in their zeal for "living rk," men to whom the detail on a building seemed often of re concern than the building itself, such as these found ch to revile in Georgian work. Its symmetry did not appeal them—they called it lifeless monotony; its scanty decora-n had no attraction for them; it was too classical, too demic, and its squareness was distasteful to minds that ed all kinks and corners. Doubtless there was some truth the imputation; but, looking at the houses designed by the rage architect in England to-day, one doubts the tenets of which they are the outcome. In many instances indeed the results are appalling. Men there are in plenty who are capable of designing houses worthy of English architecture, but they are not the men who form the bulk of the profession. These latter have little talent; often they are pushed into architecture by well-meaning but mistaken parents who desired their sons to have a "gentlemanly" calling In education it is becoming an accepted axiom that the greatest attention needs to be given to the average intellect, and the same is eminently applicable to architecture. The method of each man for himself has resulted in the medley of modern building, that mixture which is of no style and has no style, that muddle of materials and that miscellany of fussiness so absolutely at variance with the sense of a home. The ABC of Georgian work is comparatively easy to learn, and it would be far better if architects were content to be guided by it. Maybe that is a low view to take of architecture, but it is one calculated to produce better results than the indiscriminate preaching of the doctrine to be original. A developed Georgian practised generally would do much for English domestic architecture. Men of more than average ability could be trusted to make such variations as they chose, but let the rank and file of architects set Georgian models before them, following them in a modern spirit, and one of the most beneficial changes would result. One need not seek to achieve the apotheosis of Georgian architecture; but at its worst in was innocuous, and so much cannot be said of the generality of modern work. We need not copy it blindly; we can avoid its faults; we can add variety and life where they are lacking; we can in fact do what we will to meet the conditions of our own times, so long as we preserve those qualities of restfulness, dignity, and cheerfulness which are demanded by the associations of a house.

These houses in "Maids of Honor Row" are admirable examples in this connection. They are eminently satisfactory to look at and to live in. The doorways, of wood, are well proportioned, and the railings enclosing the small gardens at the front are admirable specimens of wrought ironwork, all differing in design.

A short way to the east are a number of interesting eighteenth-century houses, such as those in Old Palace Terrace; indeed, all around two sides of the Green (the oldest part of Richmond) are houses of this period—good sturdy examples of early Georgian work, with dentiled wood cornices, enriched doorways, and simple wall surfaces, having large halls and rooms and a considerable amount of panelling and solid woodwork.

Leaving the Green and walking up the Hill, we see one or two houses of similar type amidst the host of new erections, mostly belonging to the latter half of the last century, until at the end of the Terrace is found "The Wick," a house occupying the site of an alehouse called the "Bull's Head," which was pulled down in 1775. This is a very pleasant little house, though the side fronting the road has rather a bare appearance and would be the better for a little creeper; but the recessing of the wall within the arches is a relief, and the balustrade, cornice, and porch are acceptable enrichments; the ends of the tie-rods that pass through the wall are treated as medallions, with a small female head in the centre of each. The front door is a stout piece of work, like the wood rail bordering the road; the ironwork is similarly straightforward in treatment. The zinc chimney-pots are obviously recent, and only within the last few months an attic storey has been added to the house.

Just above "The Wick" is "Wick House," a modern casing (in the worst taste) over the house designed by Sir William Chambers, in which Sir Joshua Reynolds lived for some time. Directly opposite is a brick house formerly called Mansfield House, having been once the residence of the Countess of Mansfield. It is now tenantless. Severely simple, it borders



HAM HOUSE.

on monotony, yet the proportion is good and the general effect pleasing. On paper the building would look utterly uninteresting, but these old houses, when time has mellowed their bricks, form delightful pictures.

At the bottom of Richmond Hill, on the road that leads to Mortlake—towards London—are several old houses which merit attention. Marshgate House is the most interesting. This is another good example of Georgian work and follows very much on the same lines as those already dealt with, though the exposed roof with its dormers is an exception; here, too, there is some good ironwork in the gate.

Lichfield House, once the palace of the Bishop of Lichfield and now the residence of Miss Braddon, the novelist, is close by. It is a straightforward design, but the modern covered way (an iron erection) which leads from the front door proper to the door abutting the pavement should never have been perpetrated. Further along, at the bottom of Queen's Road, is Spring Grove, a rather less interesting house with a modern porch and new stabling, and there are many other brick houses in Richmond belonging to the same period, though without any particular features calling for comment.

A number of small parishes lie around Richmond. They have a history of their own which goes back centuries, but with the increase of population and the extension of building operations their boundaries are becoming broken down and they merge into the larger borough of Richmond. Petersham and Ham on one side of the river and Twickenham on the other, once distant and distinct hamlets, have now lost their rusticity, just as Kew is no longer an isolated village, but an oasis between London and Richmond, connected with both by a line of suburban houses. So that we may very legitimately extend our consideration to the outlying parts, though in doing so it will be necessary to be circumspect, else the houses become so numerous as to be impossible of notice in the present article. For that reason the road to Kew has been avoided, as it would soon lead us aside to Mortlake and the several fine old buildings in its vicinity. Instead, a short circuit has been made on the Petersham and Twickenham sides of the river.

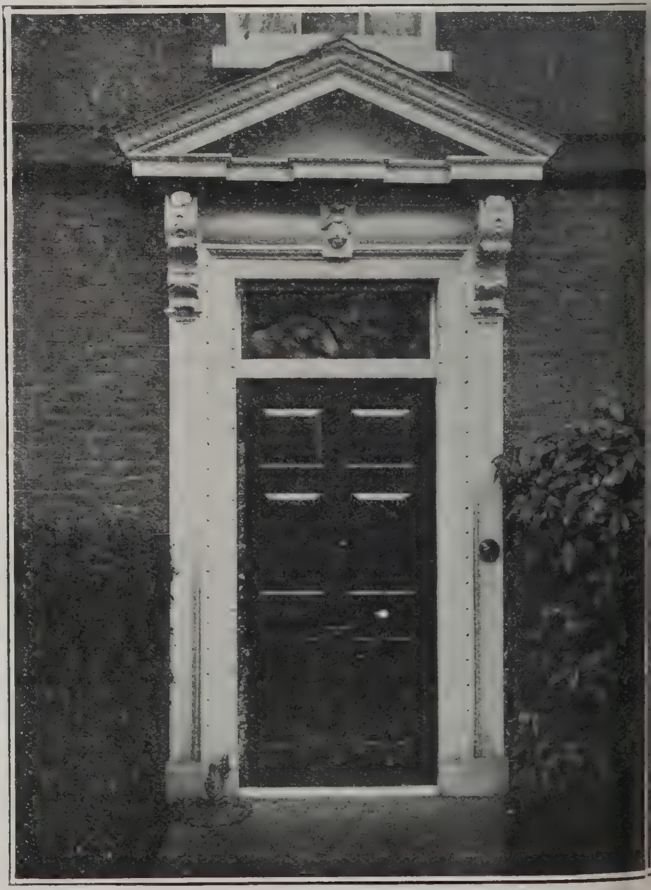
At the bend of the road that skirts the foot of Richmond Hill, below the famous "Star and Garter" Hotel, is Petersham Park, close to which are two or three delightful brick houses of the Georgian period. There is Petersham Lodge, with its typical flat arches over the windows and wood string course, even what some may be disposed to call its monotonous fenestration; but externally its particular feature is the doorway. The domed porch with its four Ionic columns (the bases of which, by the way, are happily arranged with the step) is painted a creamy-white colour, in pleasant contrast to the red brick house. The windows have old-fashioned panes, but demand no special reference; indeed, the whole house, with the exception of its porch, exhibits nothing of particular moment, though its appearance is undoubtedly satisfactory and dignified.

A little farther along the road is Rutland Lodge. This w
built about 1685, a bell at the top of the house bearing th
date; so that it belongs to the time of Queen Anne and r
to the Georges; but it seems that some additions were made
Georgian days. The house offers considerably more diversi
of treatment than usual. The wall surface is relieved
slight projections carried up as piers the whole height of t
house. Here, again, the doorway is a special feature. It
of painted wood, protected by lead flashing. Whatever
may think of the architects of this period, they at least had
admirable sense of proportion, as this doorway exemplifi
How many modern doorways, even to large mansions, are ha
so fine? It has been suggested that the top storey of Rutla
Lodge is a later addition, but there is practically nothing
support of this suggestion; indeed, everything points to t
conclusion that the house was originally built as it now stan
with the exception of the kitchen wing on the left and
passage leading to this wing on the garden front.

Close behind these houses is old Petersham Church, a ti
building originally erected in 1505, and now consisting of
ancient tower crowned by a wooden belfry with a brick na
added in 1840. The interior is very quaint, with its galler
and its box pews that leave only heads showing.

In what is now Petersham Park, nearly opposite the chur
was a fine house called "Harrington's Retreat," from the f
that it was built by the Earl of Harrington after designs
Lord Burlington. It was pulled down in 1834; the beauti
cedars seen from the road mark its site.

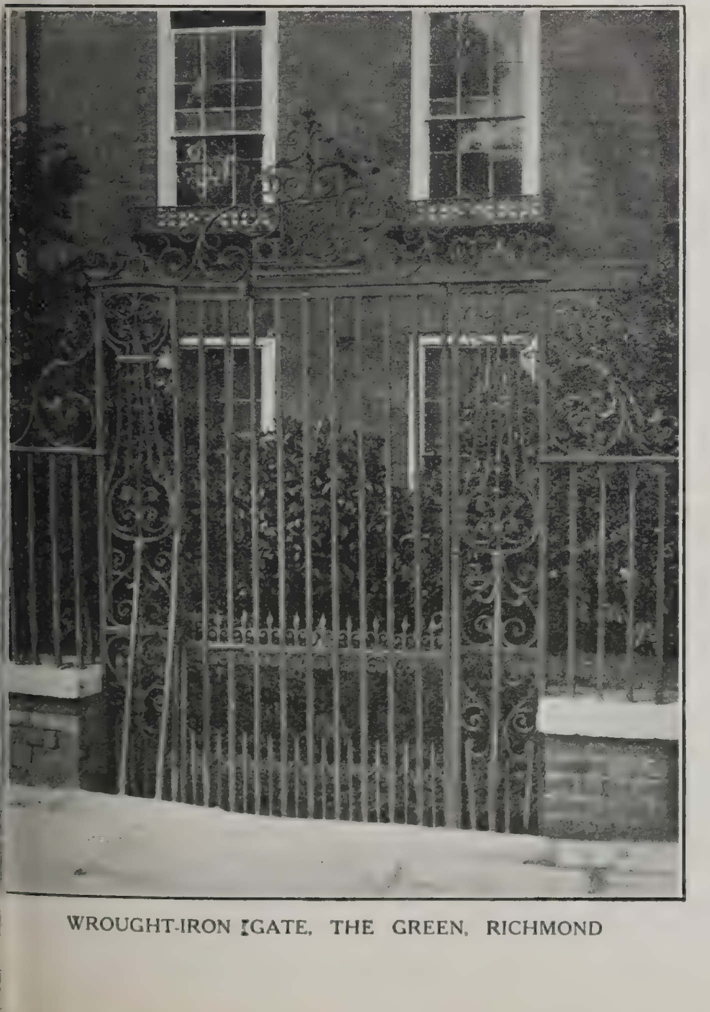
Not far away is a red brick building known as Sudbro
Park, consisting of a central portion faced with plaster a
bearing columns on the front, with a wing right and left.
was once the residence of the Duke of Argyll, who was b
in Ham House. A writer says: "The duke seems only at fi
to have built a hunting lodge about 1717, namely, the pres
drawing-room and the arched rooms and passages benea
This part of the house is very curious, the lower walls be
4 ft. thick and the upper ones 3 ft., lighted by six windo
and decorated with the arms of Argyll and various trophi



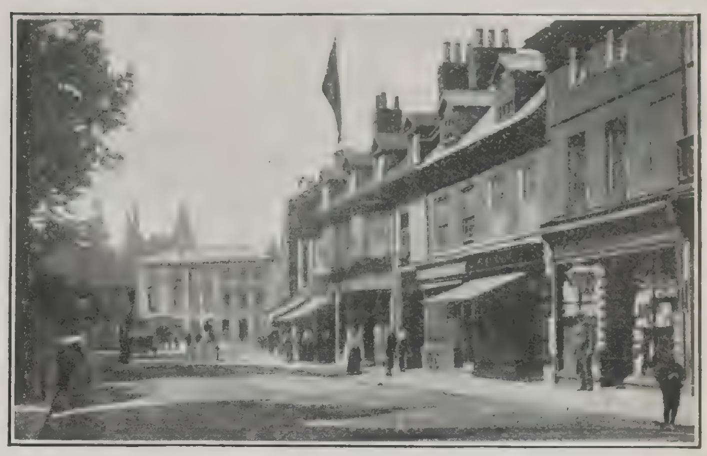
DOORWAY TO A HOUSE ON THE GREEN, RICHMOND and is altogether an exceedingly fine room. Subsequently, between 1717 and 1743, a large portion of the present mansion was erected." The house was still further enlarged by the duke's eldest daughter, who died in 1794. It is now, with its grounds, the home of the Mid-Surrey Golf Club, but it is chiefly noted as having been the residence of Canning, and from the fact that the Reform Bill of 1832 was drawn up within its walls.

In dealing with the old houses in the neighbourhood of Richmond, it is imperative to make some reference to Ham House, with which the infamous Cabal ministry is associated. (The letters of this word of course stand for the names of the five men who composed the ministry.) As Mr. E. Beresford Chancellor remarks, when we look into the chamber where the Cabal held its mysterious meetings, we can almost fancy we see the cynical Ashley arguing with the brilliant Buckingham (or rather trying to educate him to argument), Clifford whispering to Arlington (and we all know Arlington's face with the black patch across the nose), and Lauderdale, rough and ready, strident and brusque, trying to domineer over all, while his duchess sits leaning on her stick, saying very little but thinking very much. "When we stand in this place we are on the very spot where an unprincipled ministry did its best to compass the ruin of a free people." But Ham House is too well-known both for its architectural features and historical associations to call for much attention here. The illustration serves the present purpose, and it will suffice to add that the house was built in 1610, that it has a large central hall paved with black and white marble surrounded by an open gallery, that on the western side is a gallery 92 ft. long, that Verrio painted some of the ceilings, and that the iron gates are said to have been closed since they were opened to allow Charles the Second to escape when hunted by the Roundheads.

Crossing now to the other side of the river, and so reaching Twickenham, we find a terrace of houses called Sion Row, built in 1721. These, despite modern blemishes, preserve their Georgian character. They are built on a slight curve, which, with the wide-projecting eave, adds considerably to their effect.



WROUGHT-IRON GATE, THE GREEN, RICHMOND



KING STREET, TWICKENHAM.

In Twickenham town itself are several old brick houses, such as those in King Street, the main street, now gradually being spoiled; but it is Orleans House that attracts chief attention. This derives its name from the residence in it of King Louis Philippe, who rented the house on his arrival from New York in 1800, when he was still Duke of Orleans; the whole vicinity, in fact, bears relics of the exiled royal family of France. Orleans House was built by James Johnstone, Secretary of State for Scotland, the octagonal room at the western end having been added for the special entertainment of Queen Caroline, wife of George the Second. It has pillared doorways with pediments, figures of cherubs and over-ornate embellishments to walls and ceiling.

The house, now empty, has been very much altered. As originally built by Johnstone, it consisted of the centre block only and the octagonal hall; the conservatory adjoining these two, the dormers and the end bay of the main block, the library on the eastern side, and the picture gallery on the north front, are all additions made by the duke, as also the stables. It is easy to detect the difference between the later and the old work, the old being carried out in a brown-red brick with redder dressings, while the later work is in a livelier red brick with yellow strings and pilasters, caps and ornaments in light terra-cotta. On the garden front of what is called the library is a marble statue of "Malempré" by Copio, dated 1861. The fleur-de-lis and the monogram "H. O." are conspicuous in many parts. Over the lower windows of the morning-room bay on the river front are three plaques in the Della Robbia manner—female heads in white on a blue ground—which were put there about ten or fifteen years ago.

Twickenham Church has a flint tower like Richmond Parish Church, survivals of the older buildings, but the remainder is in brick, and was rebuilt in 1715, from the designs of John James, the architect of St. George's, Hanover Square, and other London churches.

Half-way between Twickenham and Richmond is a row of about twenty-four houses. These are called Montpelier Row. They were built about 1720. One of them (now known as Holyrood House) is famous as the residence of Alfred Tennyson in 1850, and it is possible that part of "In Memoriam" was written here. The houses contain some effective wood panelling and interesting fireplaces, such as the one illustrated on page 291 of this issue.

The foregoing remarks cover the more interesting of the old brick houses in the area chosen. Many others might be noticed, but they bear much the same character as those already dealt with, which serve to show clearly what solid and satisfactory work could be done by architects in England during the Georgian period.

ENQUIRIES ANSWERED.

Removing Stains from Terrazzo Floor.

L. E. W. (Chesterfield) writes: "Can you recommend a method of removing grease or oil stains from a terrazzo floor?"

—If the stains have sunk well into the floor, as in the frequent instance where oil spreads from the floor springs of swing doors, in an unsightly patch, it is no easy matter to remove them. Try cleaning with spirits of salt, and, if this is insufficient, paint the patches with terebene and afterwards cover with a pad of clean folded blotting paper or thick brown paper, and iron with a hot iron, which will draw the oil into the paper. This process may be repeated until clean paper ceases to absorb oil; after which, if the stain still shows, it may be covered with fuller's earth, and left for a day or so, the surface being finally cleaned, after removal of the powder, with spirits of salt. Another method, efficacious in the case of marble paving, and probably equally so with terrazzo, is to lay on a strong mixture of soap-lees and quicklime of the consistency of milk, so as to cover the stains for 24 hours, cleaning afterwards with soap and water. G.

Slag or Granite for Cement.

C.H. (Lincs.) writes: "Please state if broken slag is as good for cement concrete work as granite, or whether there is anything in the slag detrimental to the setting of cement. Are slag chippings as good as limestone for tar paving, and what is the relative cost of each?"

—Broken slag, if clean and free from sulphur and dust, is as good as granite, except for perhaps resistance to abrasion, which may be important if used for paving. There is considerable danger in using slag, however, for it often contains sufficient sulphur to render concrete unsound and to cause expansion and blowing. It should have been twice burnt, i.e., in heaps, after removal from the furnace, and left to weather for some time in the open. Practically all slag contains a certain amount of sulphur; and though this may not, if small in amount, render plain concrete unsound, it will be deleterious in reinforced concrete, as leading to corrosion of the embedded steel.

Slag chippings should be quite as good as limestone for tar paving, and are indeed often used in preference. The relative cost may be set at the same figure generally, but it will all depend upon the locality; and we advise our correspondent to enquire from merchants. D.

Question of Frontage Line.

A (London) writes: "I enclose a sketch of some land bounded on three sides by roads marked respectively A B and C. My client wishes to build some houses in A road, and in order to avoid apparent congestion in the side roads marked B and C, proposes to set back the flank walls abutting on the side roads a distance of about 8 ft. each. The nearest existing house in B road on the same side is about 450 ft. away, and there are no buildings at all in C road. The local authorities ask my client to set back the flank walls of the proposed houses to the frontage line of existing houses in B road. Please inform me (1) whether the local authorities have any control over the flank frontage in B road, having regard to the distance of the existing houses in that road; (2) whether the local authorities have any control over the flank frontage in C road, having regard to the fact that there are no buildings in that road at present; and (3) whether in the event of the local authorities not expressing approval or dissent within one month from date of deposit, that omission eliminates any further control over the plans."

—The powers of the Local Sanitary Authority are contained in Sections 155 and 156 of the Public Health Act, 1875, the first section referring to old buildings when rebuilt, and the second section controlling the erection of new building so far as the frontage lines are concerned.

I am of opinion that the answers to your questions (so far as they can be answered) are:—(1) Yes (though it is a little strained rendering of the Act); (2) yes, in a reasonable manner; (3) no, the onus is still upon the building owner, and his remedy is to enforce the passing of his plans by "mandamus" from the High Court. F.S.I.

EDUCATIONAL INSTITUTIONS.

The Regent Street Polytechnic.

We have received from the Regent Street Polytechnic particulars of the excellent facilities offered, in both day and evening courses of instruction, for all following, or intending to follow, the many branches attached to the building trades and the architectural profession. The Polytechnic has been rebuilt during the past 12 months, at a cost of £90,000, of which £50,000 has been contributed (including a special gift of £30,000 by Lord Leith of Fyvie) as a memorial to King Edward VII. With the new extension, the building comprises nearly 2½ acres of floor space, which has enabled the governors to provide adequate accommodation for the many branches of the work. Excellent newly equipped workshops, laboratories, studios and class-rooms have been provided, and the lighting, heating and ventilation throughout are of the latest type. The School is recognised by the Board of Architectural Education of the Royal Institute of British Architects, also by H.M. Board of Education. The day department is under the control of Mr. G. A. Mitchell, A.R.I.B.A., who was appointed by the Governors of the Institute as architect for the rebuilding scheme. The day school is suitable for youths and young men who intend entering builders' and contractors' offices and works, and for those who wish to follow any of the many designing and constructive industries where an art, technical and trade training constitutes the best basis for future excellence and success. The school has many prominent successes credited to it during the last seven years, its past students including a Gold Medallist at the schools of the Royal Academy for Architecture, and each year many of the prizes at the R.A. schools are won by past students of the Polytechnic.

The evening department is intended for those preparing for the various professional examinations, also for the craftsmen in the various building trades. Mr. Charles Mitchell, M.S.A., is the headmaster, and he personally supervises the course of instruction arranged for each student. To prevent loss of instruction to any who may be unavoidably compelled to be absent from the classes, arrangements have been made whereby, for a reasonable number of times absent, upon application by the students, the class work, together with the home work, will be sent by post. In addition, students are strongly advised to attend the tutorial classes held every Thursday evening in connection with the regular instruction. The object of these tutorial classes is to assist students in keeping up with the regular work of the session, and in overcoming any particular individual difficulties. No extra fee is charged, and students are urged to avail themselves of such exceptional facilities for obtaining technical knowledge and skill in draughtsmanship for creating and developing the faculty of architectural design.

Westminster Technical Institute.

A prospectus and time-table of the evening classes to be held during the session which began on September 18th has just been issued by the Westminster Technical Institute. The building is situated in Vincent Square, Rochester Row, S.W., the Principal being Mr. J. Stuart Ker, B.Sc., A.M.Inst.C.E. Established in 1890 by the Baroness Burdett-Coutts, the Institute was, in December, 1900, presented by her to the London County Council. The Westminster School of Art was transferred from the Royal Architectural Museum in 1903, and now forms an integral part of the Institute. Studies are carried on in a comparatively new building, erected in 1908, which contains well-equipped studios, lecture and class rooms, drawing offices and workshops. Civil engineering, gas engineering, architecture and construction, in all their many branches, are among the subjects included in the Institute's curriculum. The Board of Education is prepared every year to award Whitworth Scholarships and Exhibitions, Roya Exhibitions, National and Local Scholarships and free studentships, tenabl mainly at the Imperial College of Scienc and Technology or the Royal College o Art.

LECTURES ON TOWN PLANNING AND GARDEN CITIES.

The Garden Cities and Town Plannin Association, 31 and 32, Birkbeck Ban Chambers, Holborn, London, W.C., i prepared to arrange for lectures, with o without lantern slides, in any part of th country, illustrating the progress of th town planning movement at home an abroad, and the great development i the adoption of garden city principles A number of well-known authorities o town planning in general and upon th Town Planning Act in particular hav consented to lecture for the Associatior and arrangements are now being made fo the winter months. Applications will b considered from any public body or an institution or society taking interest i the subject, and dates will be allotted i order of priority. Applications for pa ticulars should be made to the secretar Mr. Ewart G. Culpin, as above.

The reputedly Elizabethan schools i Church Street, Edmonton, are to b demolished and a new technical institu is to be built on the site. All stone possessing historical value are to be plac in the new building.

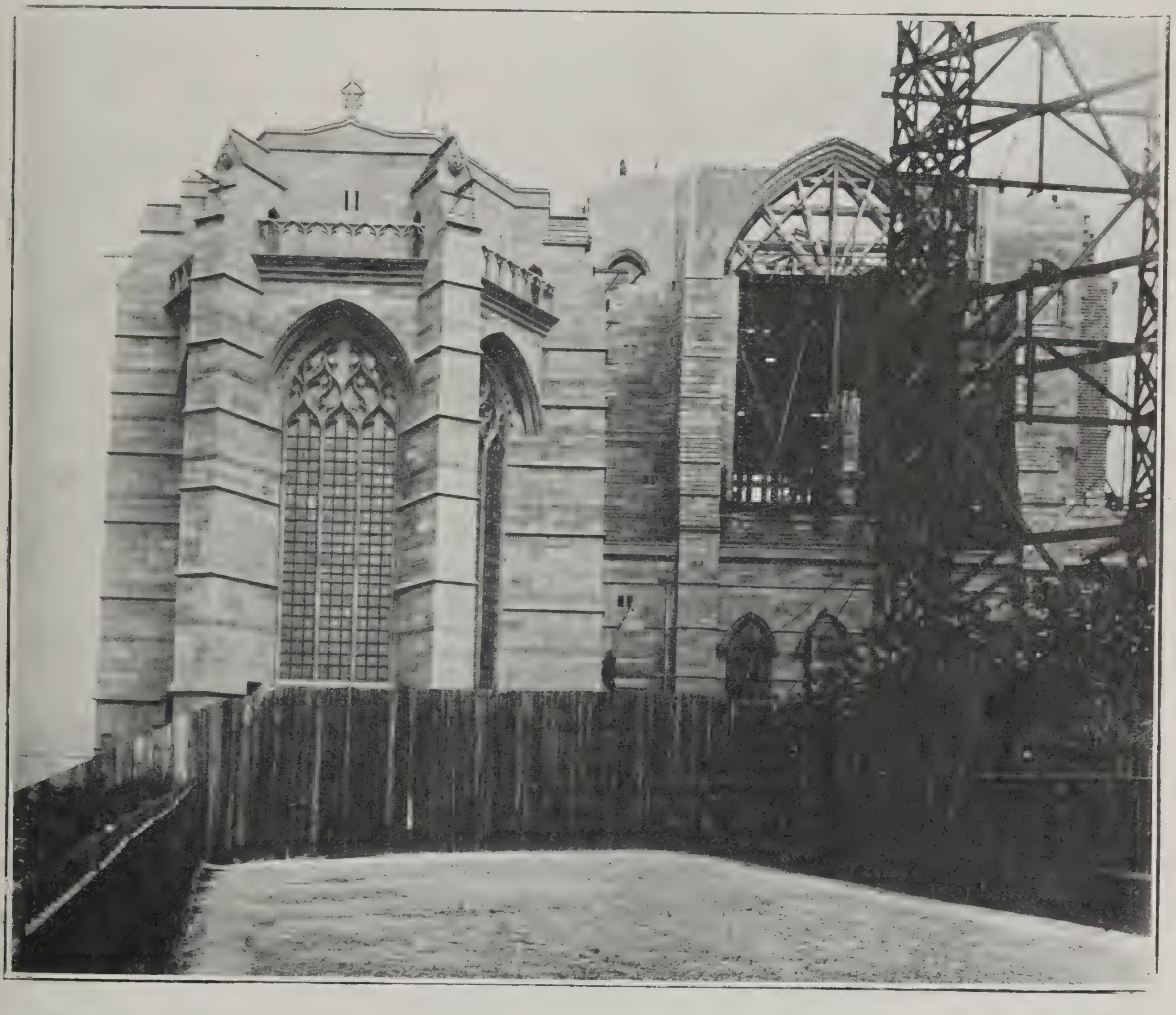
The designs for the statue to be erecte at the Piccadilly end of the Broad Wal in the Green Park to the memory of Ki Edward are now being prepared by M Bertram MacKennal, A.R.A., and M Edwin Lutyens, and will be completed about a month, when they will be su mitted to the Mansion House Committe and, also, in accordance with an unde taking given by the First Commissioner Works, placed in the Tea Room of th House of Commons for the inspection members of Parliament.

THE ERECTION OF LIVERPOOL CATHEDRAL

Since the end of June, 1910, at which me took place the consecration of the ady Chapel, considerable progress has een made in the construction of the Choir nd Chapter House of Liverpool Cathe- ral. The walls of the choir had then ached a height of 60ft., the ambulatory ehind the great east wall having been mpleted. By the courtesy of the "Liver- ool Daily Courier" we are able to repro- uce a photograph showing the present ndition of the work; the east end of the oir, with the centering for the window position, being clearly shown. During e fourteen months which have elapsed nce the consecration of the Lady Chapel, e main elevations of the choir have ad- anced 37ft. on the average. The Chapter ouse, which was commenced in July, 10, is also being erected with a rapidity mmensurate with safety, the walls now ving risen to a height of 18ft. Their tal height, when complete, will be 50ft. he construction of the choir is an im- ense undertaking. Dimensions in figures n convey only a slight conception of the ajestic proportions of the building. The eat east window, which will form a me- orial to one of Liverpool's most honoured ipping princes, the late Mr. T. H. Ismay, has now reached the springing of the tracery and already towers 30 feet above the roof of the Lady Chapel. The tracery will rise to a further height of 30 feet.

The average elevation of the walls of the main fabric has reached 97 ft., and the highest point is 115 ft.—the transverse arches of the choir. More than a month ago the main transverse arch was completed, and the other arches which will carry the vaulting of the choir have since been built. The contractors hope to have finished some of the choir vaulting by Christmas. Until the plans and drawings of the central tower have been approved in detail, it is impossible to proceed with the construction of the great transept, and the consequent delay will, of course, interfere with the date (1914) fixed for the completion of this part of the Cathedral. The work may now extend to 1915 or 1916. The twin towers which were to have crowned the transepts, and which are to be superseded by the more massive single tower in order to provide a larger central space, had been designed for a height of 260 ft. The new central tower will be 280 ft. high, exceeding the great central tower of York Minster by 82 ft., and the towers of Westminster Abbey by 60 or 70 ft. It will rise to an altitude of 140 ft. above the transepts, or 430 ft. above the sea level. This immense tower will probably be 104 ft. square at its base, thus dwarfing the central tower of York Minster, 65 ft. square, which is at present the largest in England.

The abandoned twin towers, which had been built up many feet from their concrete foundations on the solid rock, are to be converted into north and south transepts, and will eventually be duplicated at the western end of the centre tower. This revision of design, involving an extra expenditure of £25,000, will give a central space 190 ft. by 87 ft.



LIVERPOOL CATHEDRAL. VIEW OF EAST END OF LADY CHAPEL, AND CHOIR IN COURSE OF ERECTION
G. GILBERT SCOTT, ARCHITECT.

POINTS ABOUT VENTILATION.

In a paper on ventilation, which he read before the Physiology Section of the British Association at Portsmouth on September 5th, Dr. Leonard Hill, F.R.S., said that the discomfort and depressing effect of badly ventilated dwelling rooms, workshops, schools, and meeting-houses had nothing to do with the chemical purity of the air, and Haldane had disproved by exact experiment the existence of any poisonous organic chemical matter in the exhaled breath. The ill-effects were mainly due to the effect of the close air on the temperature regulating mechanism and cutaneous nerves. The only reason for maintaining a high standard of chemical purity of the air of dwelling and working rooms was to prevent unpleasant smells arising from dirty clothes, sweat, and floors, and to keep down the mass influence of infecting bacteria. Too much importance had been paid to the chemical purity of the air, and not enough to the temperature. It was necessary to maintain the coolness and movement of the air, for this promoted the metabolism and activity of the body, and by stimulating the cutaneous nerves kept up the tone of the body. Dr. Hill said he believed every employer and benefit society would find it pay both in increased output of work and lessened loss from ill-health if factories and workshops were brought below 60 deg. F., and well swept with currents of air. We accustomed ourselves to live in rooms that are too warm.

CUTTING AND WELDING BY OXY-ACETYLENE FLAME.

The method of cutting and welding metal by means of an oxy-acetylene flame is already familiar to readers of this journal, accounts of work performed by this process, in America and elsewhere, having been published from time to time. We are now able to give particulars of an apparatus which is manufactured by Messrs. Matthews and Yates, Ltd., of Manchester. Welding usually implies force, but in the oxy-acetylene process no hammering or compression is required, heat from the blow-pipe being the only requisite. Many welds can be made without any flux; but with some metals, such as cast-iron and aluminium, specially prepared powders assist in making a perfect fusion. For the filling of crevices, and similar work, use is made of special sticks of the same metal as that which is being welded. The essential features of the apparatus are an acetylene generator, a supply of oxygen and a blow pipe, together with the automatic regulator, gauges, and flexible tubing. The "Cyclone" acetylene generator (patented) consists of a cylindrical tank, which, placed vertically, forms the outer casing containing water to a defined level. In the centre of this is another vertical cylinder, of smaller diameter, which forms a reservoir for the acetylene. Inside this reservoir are placed a number of still smaller diameter vertical cylinders, which contain calcium carbide, from which the acetylene is generated by contact with the water from the outer tank. Each of the carbide cylinders is provided with a tap, and there is a corresponding tap for each cylinder on the reservoir. From the reservoir the gas goes to an hydraulic valve attached to the outside of the outer tank. From this valve it passes to a drier, which abstracts the water, and thence to the blow-pipe.

Oxygen, the gas used in this process, can be obtained in cylinders at a pressure of from 1,500 to 3,000 lbs. per sq. in. The blow-pipe is the actual welding instrument, and the most important factor of the plant. It is, of course, portable, weighing less than one pound. A variety of nozzles of various sizes are provided with the implement. These can be easily fitted, rendering the tool suitable for all kinds and sizes of work.

By this process, different metals may also be welded together. Cutting is performed by a separate jet of oxygen, which is directed upon the metal to be cut after having been heated by the welding jet. The two jets are arranged either close together or concentrically, the oxygen being in the centre and piercing the welding flame.

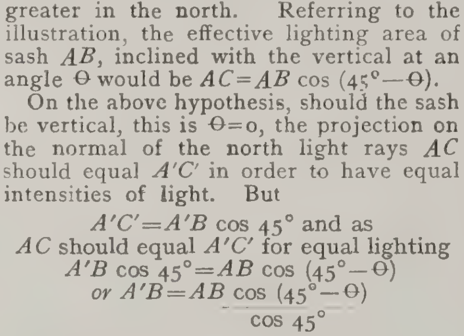
SAW-TOOTH SKYLIGHTS.

The method of determining the relative sizes of lighting areas for inclined and vertical saw-tooth skylights, as used by Mr. F. W. Dean, engineer, of Boston, Mass., rests upon the assumption that the effective lighting area of a sash is its length multiplied by its normal projection on a plane inclined at an angle with the vertical of 45 deg., this being taken as the inclination of the rays for the direct northern skylight. In order to prevent the admission of direct sunlight, the maximum angle of inclination for a saw-tooth skylight is about 15 deg., which is considered a fair average for all parts of the United States; this angle, of course, varies with the latitude, being less in the south and greater in the north. Referring to the illustration, the effective lighting area of sash AB, inclined with the vertical at an angle Θ would be $AC = AB \cos (45° - \Theta)$.

On the above hypothesis, should the sash be vertical, this is $\Theta = 0$, the projection on the normal of the north light rays AC should equal $A'C'$ in order to have equal intensities of light. But

$$A'C' = A'B \cos 45° \text{ and as}$$
$$AC \text{ should equal } A'C' \text{ for equal lighting}$$
$$A'B \cos 45° = AB \cos (45° - \Theta)$$
$$\text{or } A'B = \frac{AB \cos (45° - \Theta)}{\cos 45°}$$

Where $\Theta = 15°$ this ratio is as 1 : 1.23—that is, vertical sash should have about 23 per cent. greater glass area than sash inclined at 15 deg. to secure the same intensity of light. In actual practice, however, it has been found that it is not necessary to increase the glass area to this extent to receive satisfactory lighting.



Mr. Dean has designed a number of mills with vertical saw-tooth sash, and figures an inclined sash the proper size and proper angle to secure the desired amount of skylight without any direct sunlight, and then projects the roof until it meets the vertical, the increased height of the saw-tooth face being entirely devoted to glass. This method is said to have given satisfactory results in regard to light.

Concerning cost, it has been found that contractors when requested to submit comparative bids on the two types of construction for the same job make practically no difference in cost, the simplicity of construction, greater ease of erection, and the use of standard sash for the vertical type, offsetting the extra length of timbers and extra roofing required. With vertical sash there will be a greater roof area exposed to the direct rays of the sun, but the superior ventilation procurable with this type, Mr. Dean believes, offsets this objection.

The amount of direct skylight transmitted into a mill by the vertical rays which would strike the inclined sash would be practically nil, owing to the critical angle of glass which would cause much of the light to be totally reflected and would allow very little to enter into the mill.

A garden suburb, containing 68 villas, is to be erected at Woking, Surrey, at a cost of £20,000, by the local Co-operative Society.

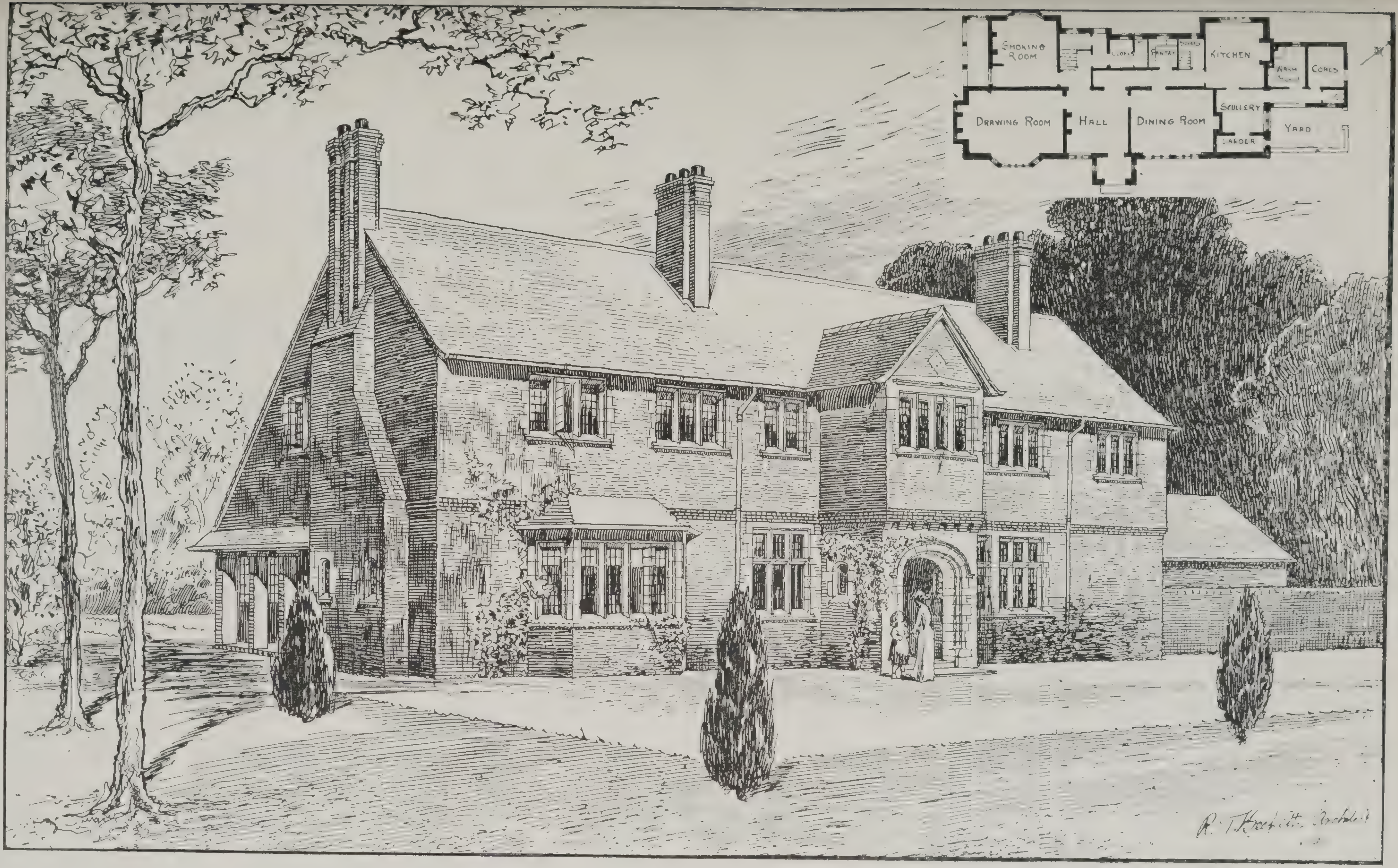
EXCAVATIONS AT THE VILLA O HORACE.

Excavation work has for some time pas been in progress about the site where, i former days, stood the celebrated farm an villa of Horace. The approximate site wa determined during the second half of th eighteenth century by a French abbé, Mg Capmartin de Chaupy, who was able t prove with certainty that the only situa tion which answered entirely to the descrip tion given was about eight miles from th modern Vicovaro, the Vicus Varia tha Horace mentions as his nearest town.

Systematic excavations, says a writer i the "Standard," have been initiated by th Italian Government, to bring to light al that has been left by past vandals, wh as late as seventy years ago did not hesi tate to carry off the beautiful marbles an statues lying about among the ruins i order to burn them and turn them int lime. From what has already been foun it would appear that the historic villa wa in the middle of an extensive garden, an was surrounded by a portico, whic protected it from the excessive heat o summer. Besides, there was an artificia lake in the middle of the gardens 350 yard square and six feet deep, standing in fron of the house, fed by the waters of the rive Licenza through a most ingeniou hydraulic system, the pipes of which hav been found almost intact. The hydrauli works extended to the thermæ or baths which latter date from the time of th Antonines, and of which the remains hav also been found next to the villa on the lef with all the different rooms for bathing cooling, or resting after the bath. Magnificent mosaic pavements, fragments o beautiful frescoes and stucco work, an marble heads—one of which represent Faustina the younger—have also come t light. The body of the villa is composed o reticulated work, which is characteristi of the finest period of Roman architecture in which the exquisitely regular form o the stones gives the appearance of a net work to the walls, and which must hav been particularly difficult to carry out i the hard limestone of the neighbourhood.

THREATENED BUILDING STRIKE I MANCHESTER.

A strike of all sections of the buildin industry in Manchester is threatened b the beginning of next month. Recentl the Executive Committee of the Nationa Association of Builders' Labourers ha been meeting in Manchester, and at meeting held in St. Michael's Schools George Leigh Street, it was announced tha the masters have been asked to give minimum of sixpence an hour to al general labourers, of 6½d. to bricklayers labourers, and 7d. to scaffolders, mill men iron-fixers, and other special labourers Some employers are already paying the minimum of 6d., but others are said t have a sliding scale, under which the me cannot estimate their wages until the payment is made. One of numerous complaints made against some of the employers is that they charge the men a weekly sum for the use of wheelbarrows. During the last few weeks over 600 general labourers have joined the Union. Joiners, bricklayers, wood-cutting machinists, and others are joining in the demand for increased pay. The intention is to declare a general strike of all connected with the building trade if the employers do not make a favourable response to the demands by October 2nd.



HINDERTON HEY, NESTON. R. T. BECKETT, ARCHITECT.

(Royal Academy Exhibition, 1911.)

LEGAL.

Deviation from Building Plans.

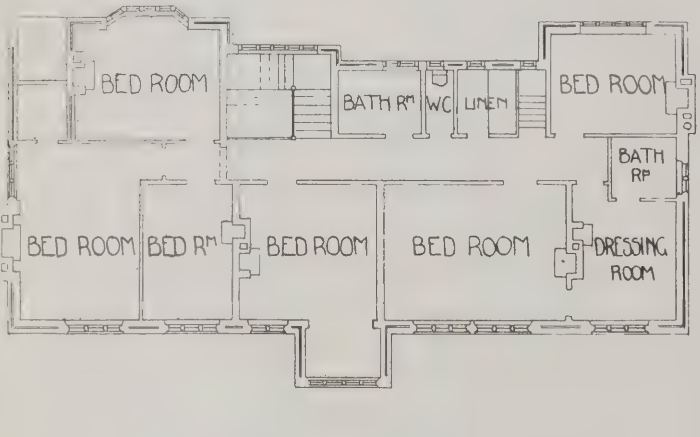
A deviation from building plans was the subject of a prosecution in the Doncaster Borough Court recently, Mr. T. H. Johnson, architect and surveyor, being summoned for two offences under the by-laws. It was stated that Mr. Johnson submitted plans in March for a building in French Gate, to be used as a shop and temperance hotel. The plans showed walls 9 ins. thick. Mr. Johnson's attention was drawn to the fact that the walls should be 13½ in. thick. The plans were amended and passed on March 28th, but on August 11th the Borough Surveyor discovered that the third storey of the building had only a 9 in. external wall instead of the 14 in. shown on the plans, and further that a very substantial addition had been made to the premises without any plans being submitted, this addition consisting of six bedrooms, a bath-room and w.c. The Surveyor called defendant's attention to the irregularity, and defendant told him it was due to a series of unfortunate circumstances. The matter was brought before the Sanitary Committee, and the Borough Surveyor wrote asking him to discontinue operations, but the work had continued up to the present time.

The Town Clerk stated that between eight o'clock on Saturday night and nine o'clock that morning a plan was delivered showing some of the proposed amendments of the original plans and as actually carried out. The Sanitary Committee could not pass the building as it now stood—it was contrary to the by-laws. So far as the walls were concerned they were wrong from the basement to the top, and it was not at all unlikely that the whole of the building would have to be pulled down. The basement wall of the building was 18 in. where it ought to be 22½ in. thick, the ground floor was 14 instead of 18, and the top storey 9 in. instead of 14 in., and he not only asked for a substantial penalty, but for a continuing penalty from August 11th.

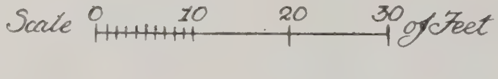
In cross-examination, Mr. Kirby, the Borough Surveyor, said he had not served any notice upon defendant asking him to put right anything that was wrong. He asked him to suspend operations. A few weeks ago defendant showed him a plan of the alterations for his inspection, but it was not in duplicate.

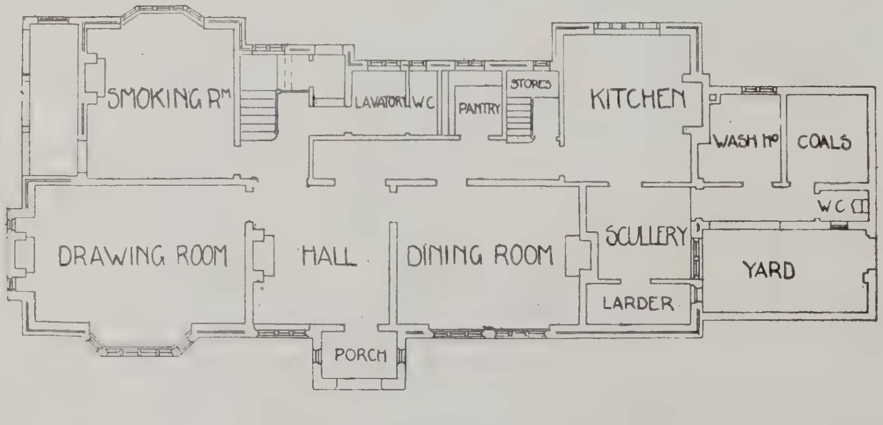
Mr. Williamson, in defence, said it was unlikely that in erecting a building which would cost £7,000 a man would wilfully break the by-laws in order to save £15. In the negotiations defendant had always said he was willing to put right anything that was wrong. Owing to a change of clerk in defendant's office the wrong plans were sent to the contractor and defendant was actually paying for a 14 in. wall, whilst a 9 in. wall had been erected, and he was still prepared to put the error right. He submitted that a nominal penalty would meet the case.

A fine of 50s. and costs was imposed in each case.



FIRST FLOOR PLAN





GROUND PLAN

HINDERTON HEY, NESTON. R. T. BECKETT, ARCHITECT.

THE SMOKE NUISANCE.

An Instrument to Measure Density.

At the concluding meeting of the Britis Association at Portsmouth an inte esting paper on "Smoke Abatement" wa read in the Engineering Section by D J. S. Owen, who dealt with the possibili of fixing a new standard of smoke emissio from factory chimneys. He said that fror the point of view of smoke emission th present position of the manufacturer wh burnt bituminous coal in his furnace wa that, while he knew dense smoke to be ur necessary and wasteful, entire absence smoke was practically impossible to attai under working conditions. The questio therefore was, what was the least amour of smoke such a manufacturer might b asked to limit himself to? The preser legal standard of "black smoke in suff cient quantity to be a nuisance" wa admittedly unsatisfactory, as black smok was a thing rarely, if ever, seen; also, th blackness alone was no measure of th amount of pollution nor even of the amour of soot per ton of coal burnt. The pr sent standard was therefore out of dat Meanwhile the public had to breathe po luted air, to suffer in health and pocke and to have their buildings injured an disfigured, and their sunshine cut off. sound standard of maximum allowab amount of smoke should be fixed and e forced. Two questions must be answere before such a standard could be fixed "(1) What is the best and most pra ticable method of measuring smoke?" an "(2) What is a fair maximum of smok emission to fix?" The standard suggeste was one of maximum density for maximu time of emission. By density was mea amount of soot per unit volume of flu gas. A smoke of great density would b permitted for a short time only, where one of less density might be permitted f a longer time. The method of measurin the density suggested was by matching th opacity of the smoke to that of calibrate smoked glasses, each glass representing certain density of smoke in a column unit thickness. The final figure for con parison would be obtained by dividing th density represented by the glass by the di meter of the chimney. By careful co struction and the elimination of certai errors an instrument could thus be mad to give a fair basis of comparison with standard density. The author had devise and experimented with an instrument this type with promising results Th Alkalies Act of 1906 fixed a standard max mum of one-fifth of a grain of muriat acid per cubic foot in smoke or noxio fumes, and it appeared that the time ha arrived when the soot from furnaces shoul be dealt with on similar lines, modifie to suit the case.

HINDERTON HEY, NESTON.

This house is now being completed fo Mr. Walter Mansfield. It is faced wit Ravenhead rustic bricks, 2½ in. thick, wit Runcorn stone dressings. The groun floors are of teak laid on concrete and th roofs covered with Westmorland gree slates. Messrs. W. Fleming and Co., o Neston, are the builders, and Mr. R. T Beckett, of Chester, the architect. Th drawing reproduced on the preceding pag was hung at this year's Royal Academ exhibition. From the accompanying plan it will be seen that there are three good sized rooms, a large hall and kitchen o the ground floor, and six bedrooms above

THE GLASGOW SCHOOL OF ARCHITECTURE.

The calendar of the Glasgow School of rt for the session 1911-12 has just been sued. A joint course of instruction in rchitecture is given in the School of Art id in the Glasgow Technical College ider the direction of Professor Bourdon, e joint classes forming the Glasgow hool of Architecture. The Glasgow In- itute of Architects has been consulted garding the co-relation of office appren- eship with the course of study provided the School of Architecture, and the uncil of the Institute has expressed its ncurrence in, and issued to the members ecommendation in favour of, the alterna- e schemes of study, under which atten- nce at the School of Architecture is com- ned with the serving of an office appren- eship. The R.I.B.A. has granted that: The diploma or senior certificate of the hool (the latter with the full preliminary amination) exempts from the prelimin- y and intermediate examinations of the I.B.A."

The complete course of study leads to diploma and is called the Diploma urse. A restricted portion of the same irse, called the Certificate Course, quali- for a senior certificate; the junior divi- n of this course for a junior certificate. e Diploma Course, which is preceded by reliminary examination, must include endance at the dav classes. The Certi- ite Course is usually taken in the ning classes. An entrance examination equired. Special courses have also been anised for (1) furniture designers, gar- architects, scenic artists, and any other fessional students to whom architecture st be part of their course of studies; (2) dents of the painting, modelling and orative art courses; (3) measurers, lders, engineers, and other students require some instruction in architec-

OBITUARY.

he death occurred in Glasgow last week Mr. J. J. Bannatyne, R.S.W., who, the greater part of his life, was in- ately associated with art in Glasgow. had exhibited in water-colour and in at the Royal Academy, and at exhibi- s in Liverpool, Glasgow, and other res. Mr. Bannatyne was 76 years of

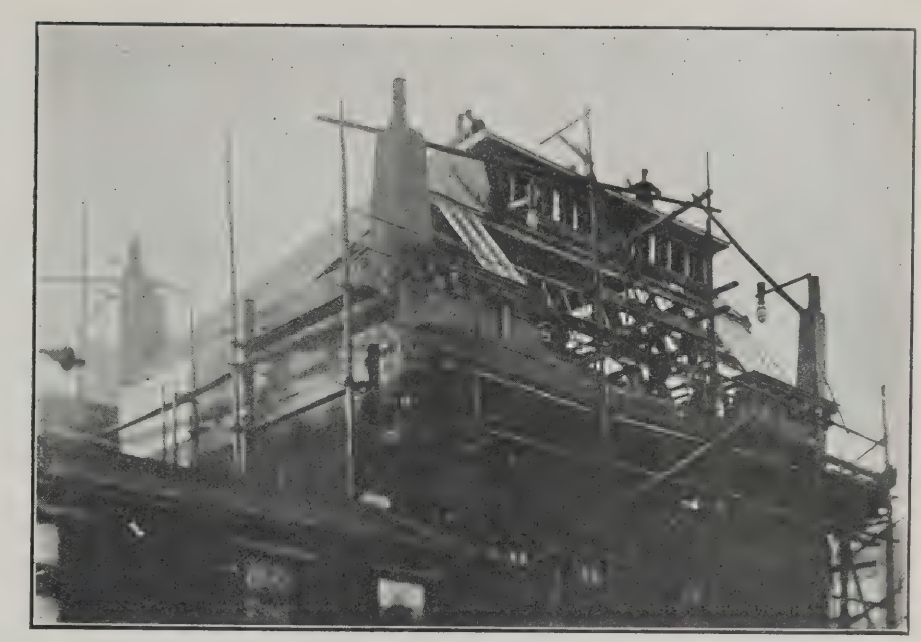
RTSMOUTH NEW WATERWORKS.

t Portsmouth new filter beds and other ks have been carried out recently by Portsmouth Waterworks Company er the general superintendence of Mr. bert Ashley, engineer to the company. hereas the water is usually filtered at w level near the source and pumped high-level service reservoirs for distri- on, in the present case the pumping is before filtration, and the water is vered by the pumps straight to the filter on Portsdown Hill, whence it gravitates ct to the service reservoirs. There are n filter beds, six measuring 200 ft. by ft., and one about 150 ft. bv 130 ft. The ace of sand in each of them has an of about half an acre. The fine sand ft. in thickness, and 75 per cent. of ill pass through a sieve having 1,600 ings to the square inch. It is sup- ed on layers of shingle carefully graded coarse to fine, the finer layers being ediately under the sand, while the om or coarser layers rest direct upon k drains. It was thought undesirable to employ sea sand; that which was eventually used was obtained from the top of an uninhabited hill near Pulborough, thus ensuring against the possibility of contamination. The shingle came from a point near the Needles. Both the sand and the shingle, to the amount of 30,000 tons, were carefully washed.

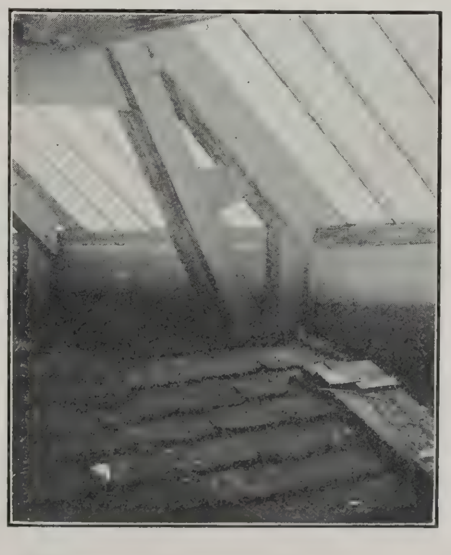
There are two new reservoirs, each of which measures 360 ft. by 160 ft., and contains 13 ft. 6 in. of water. The capacity of each is rather over 4,000,000 gallons, or sufficient to supply Portsmouth for about six or eight hours on a busy summer morning. A 30 in. outlet main conveys the water from the new reservoirs to the base of the embankment of the old ones, at which point it is connected with all the gravitation mains belonging to the company.

The total filtering capacity is 12,000,000 gallons per 24 hours, and the high-level filtered water storage capacity is now 14,000,000 gallons, or nearly 48 hours' supply, apart from the 3,000,000 gallons of water in the filter beds themselves.

The works were carried out by Messrs. John Mowlem and Co., of London, with Mr. D. S. Williams as resident engineer.



QUEBEC HOUSE, BRADFORD: VIEW OF NEW STOREYS IN COURSE OF CONSTRUCTION.



QUEBEC HOUSE, BRADFORD: DETAIL SHOWING OLD ROOF.

AN INTERESTING BUILDING ALTERATION.

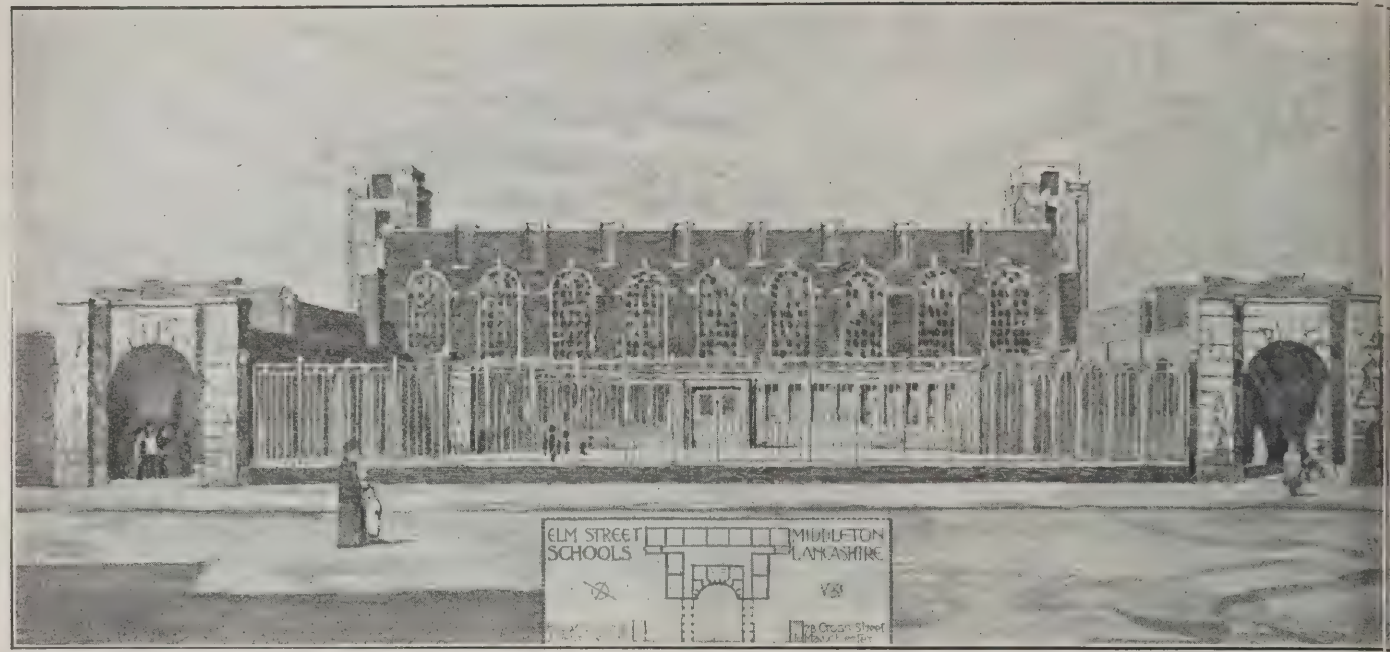
BY J. W. OVEREND, A.R.San.I.

Architects are often called upon to make peculiar alterations to existing buildings, and the problems raised are sometimes of such a nature as to require considerable ingenuity and skill. Such an alteration was carried out recently in Bradford. Upon a block of buildings known as Quebec House it was necessary to erect two additional storeys and a store loft before disturbing the old roof, so that the tenants below could continue work during the alterations.

The original building, erected in 1906, was the first in the city to be constructed almost entirely of reinforced concrete; and the extension had to meet the requirements of the London and Provincial Reproduction Co., Ltd., one of the tenants.

One illustration shows the old roof covered with sandstone slates, which are commonly used in Yorkshire stone districts. The new roof is formed of Congo roofing, laid on floor-boards, which are nailed both straight and diagonally to the purlins without spars. Heywood's patent glazing was used. The new roof trusses, of red deal, are exceptionally strong, having to carry the heavy loads upon the floor over the tie beam, which is just visible in the photograph, and to span, in one case at least, a distance of 40 ft. without any intermediate support. All joints in the trusses are so cut and cogged together as to ensure wood pulling or thrusting at wood in all cases, the bolts, which have screw nuts at each end, simply holding the parts together, and not being relied upon for strength. The trusses do not rest upon nor thrust at the wall, which is visible in the photograph, but bear en- entirely upon the old reinforced-concrete eaves and beams below. Dual braces spanned the old gutters, which had not been interrupted when photographed, and the jack pieces were shortened for the same reason, being eventually wedged up to transmit part of the load. The top illustration gives an external view of the alterations during progress.

The works were carried out from the plans by, and under the direct personal supervision of, Mr. Edgar Parkinson, who was the architect for the original building.



EDGAR WOOD, F.R.I.B.A., AND J HENRY SELLERS, ARCHITECTS.

CORRESPONDENCE.

Early Bridge Building.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I was much interested in reading the article on "The Annals of Bridge Building" in your issue of July 26th, in which you trace the early history of such construction. To the information there given I would add that Nebuchadnezzar is said to have built a bridge across the Euphrates about 600 years B.C., connecting the two portions of the city through which the river flowed. To do this, he turned the river out of its course in order that his workmen might construct the mighty buttressed piers in safety. These were of quarry stones clamped together with iron and soldered with molten lead, and the banks were lined with kiln-burnt bricks set in bitumen for mortar. Here we have what is considered a very modern method of sound construction!

There appear, however, to have been no arches employed, because the river is said by Herodotus to have been spanned by beams and planks laid from pier to pier.

It is to be noticed that quarry stones were used in a city where clay was the only local material. This suggests that stone might have been more in use than is usually considered.

This river bridge is stated to have been 1,000 yds. long (? feet, or was the road approach included?) and further that under the river a tunnel was bored for the purpose of connecting the two great wings of the Palace together. It is traditionally stated that the Queen of Babylon had the course of the river diverted to allow of its safe completion. The work was carried out by slaves, who took only seven days in its completion!

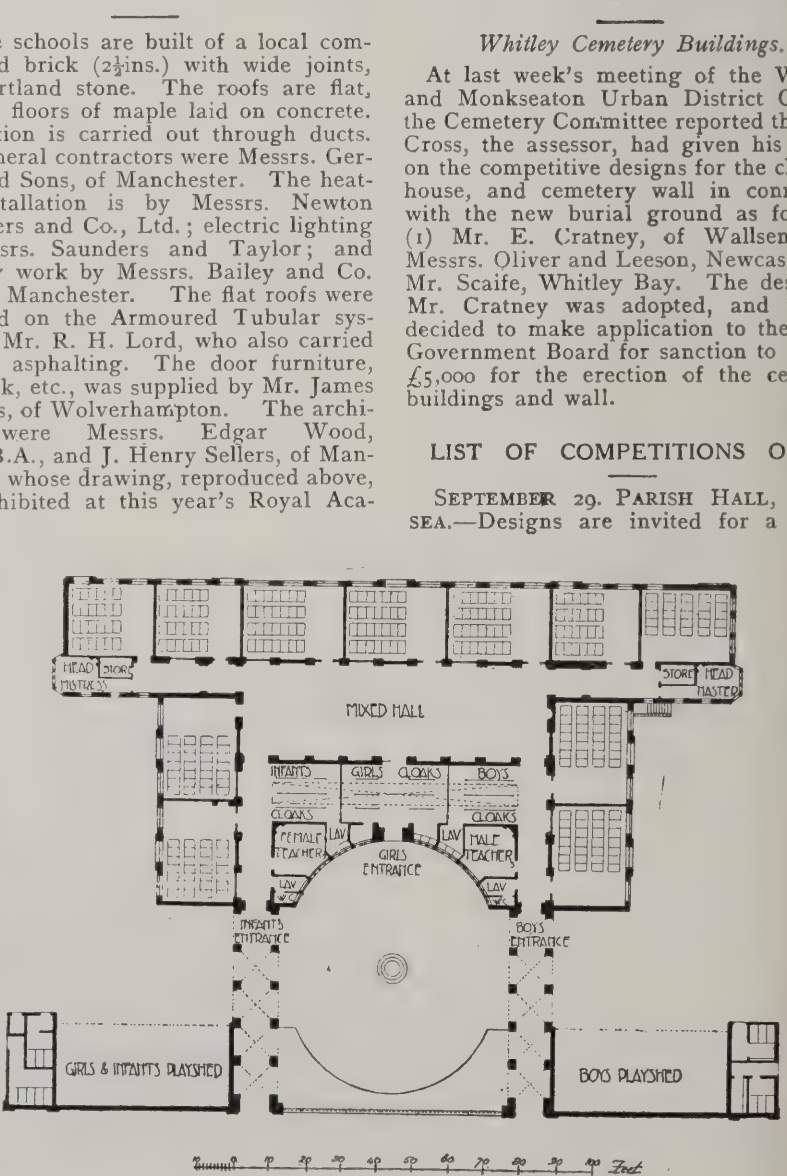
Prof. Flinders Petrie describes a vault at Denderah dating back to about B.C. 3600. This is composed of three crude brick rings. And there are two arches at Rahotes which are supposed to be of about the same date.

Yours truly,
H. SLICER.

Peckham.

ELM STREET SCHOOLS, MIDDLETON,

These schools are built of a local common red brick (2½ins.) with wide joints, and Portland stone. The roofs are flat, and the floors of maple laid on concrete. Ventilation is carried out through ducts. The general contractors were Messrs. Gerrard and Sons, of Manchester. The heating installation is by Messrs. Newton Chambers and Co., Ltd.; electric lighting by Messrs. Saunders and Taylor; and sanitary work by Messrs. Bailey and Co. —all of Manchester. The flat roofs were executed on the Armoured Tubular system by Mr. R. H. Lord, who also carried out the asphalting. The door furniture, ironwork, etc., was supplied by Mr. James Gibbons, of Wolverhampton. The architects were Messrs. Edgar Wood, F.R.I.B.A., and J. Henry Sellers, of Manchester, whose drawing, reproduced above, was exhibited at this year's Royal Academy.



ELM STREET SCHOOLS, MIDDLETON: GROUND-FLOOR PLAN.

COMPETITIONS.

Whitley Cemetery Buildings.

At last week's meeting of the Whit and Monkseaton Urban District Coun the Cemetery Committee reported that M. Cross, the assessor, had given his awa on the competitive designs for the chape house, and cemetery wall in connecti with the new burial ground as follow: (1) Mr. E. Cratney, of Wallsend; Messrs. Oliver and Leeson, Newcastle; Mr. Scaife, Whitley Bay. The design Mr. Cratney was adopted, and it w decided to make application to the Lo Government Board for sanction to borr £5,000 for the erection of the cemet buildings and wall.

LIST OF COMPETITIONS OPE

SEPTEMBER 29. PARISH HALL, Sw-SEA.—Designs are invited for a par all, to be erected in the Swansea district a cost of not more than £1,200. Parculars on application to Mr. Herbert lant, Solicitor, 14, Fisher Street, wansea.

October 4. Houses, Easington.—he Easington R.D.C. invite plans for iree types of houses, of which it is proosed to build 100 at Murton Colliery, urham, in streets of 20, with 16 ft. back reets, 18 ft. frontage, and garden ground front of each house to a depth of 30 ft.; n earth-closet and outside pantry to be rovided for each house. Type A: 28 ft. able, 3 bedrooms, 1 living-room, 1 sittingoom, scullery (offshot), with kitchen ange and bath. Type B: 25 ft. gable, 3 edrooms, 1 living-room, scullery, with itchen range and bath. Type C: 2 bedooms, 1 living-room, and scullery, with itchen range and bath. The successful andidate will receive 2½ per cent. commission upon the net cost of buildings hen erected. Plans must be sent to Ir. J. M. Longden, Council Offices, Easngton, Castle Eden.

October 7. Baths Extension, Barnsey.—Barnsley Town Council invite rawings for a proposed extension of ublic baths in York Street and Race treet. Premiums, £50, £30, and £20. articulars from Borough Surveyor, lanor House, Barnsley.

October 7. Housing Scheme, Evesam.—The Rural District Council invite ompetitive designs, with estimates of cost, r laying out a building site at Boadway, nd the erection thereon of 30 cottages nder the Housing and Town Planning ct, 1909. The architect whose design is ccepted will be appointed to carry out he work at an inclusive fee of 5 per ent. nett, to include all travelling and ther expenses. A block plan of the site nd all necessary particulars may be obained from E. H. Wadams, Clerk to the ouncil, Union Offices, Evesham, to whom pplications, accompanied by a deposit of 1 1s., must be sent.

October 12. School, Coseley.—esigns are invited for a school to accomodate about 200 children. Particulars ay be obtained from the Education ffices, Coseley, near Bilston.

October 14. Alterations to Hotel, Bristol.—Plans are required for alterations at the Grand Hotel. Particulars may e obtained from Mr. F. A. Jenkins, 44, orn Street, Bristol.

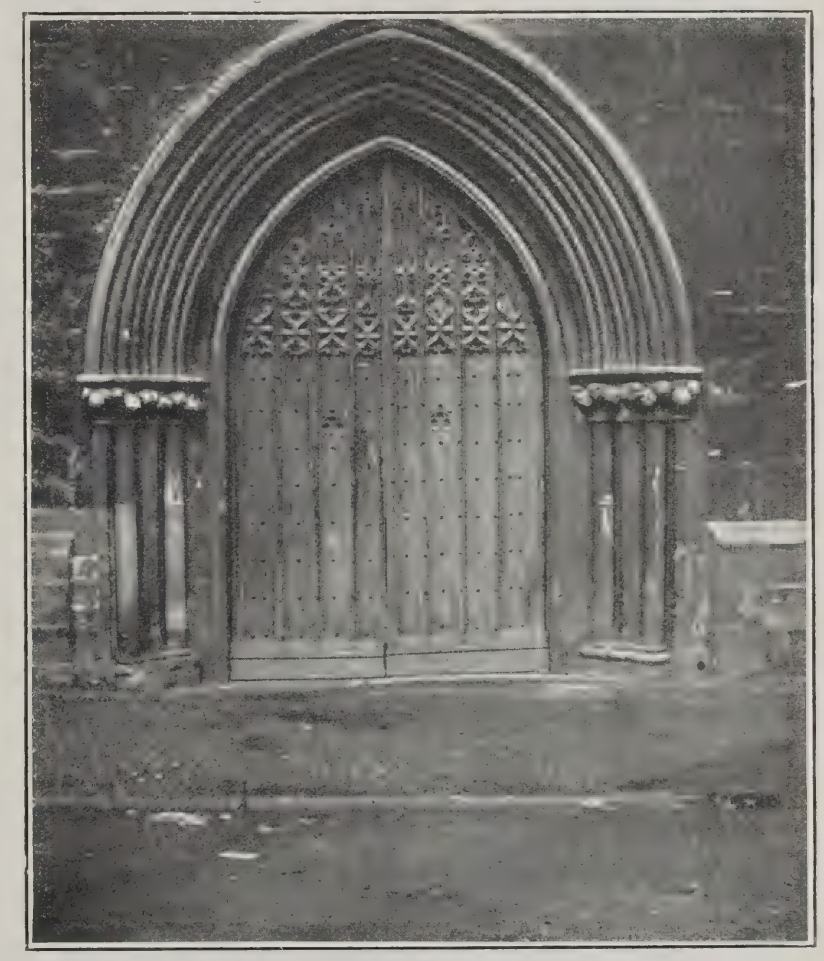
October 28. Workhouse Extension, alford. — Premiums £20 and £10. imited to architects practising in Salford nd district. Particulars from Board of uardians, Salford.

October 31. New Town Hall, Maryebone.—Premiums, £100, £75, and £50. ssessor, Mr. Henry T. Hare, F.R.I.B.A.

November 30. Technical Institute, ardiff.—The Cardiff Education Comnittee invite architects to submit cometitive designs and estimates for a echnical institute to be erected in Cathays ark, Cardiff. Mr. J. S. Gibson, .R.I.B.A., has been appointed assessor. ull particulars may be obtained from ohn J. Jackson, Director of Education, ducational Offices, City Hall, Cardiff, on leposit of £2 2s.

November 30. Hospital, Hastings.—he Joint Committee of the East Sussex ospital and the King Edward VII. emorial Fund invite architects to subnit competitive designs, etc., for the proosed new hospital. Mr. Edwin T. Hall, .R.I.B.A., of 54, Bedford Square, London, has been appointed assessor. Conditions and instructions may be obtained from Mr. W. M. Rhodes, East Sussex Hospital, Hastings, on deposit of £1 1s. Premiums of £125, £75, and £50 are offered.

January 20, 1912. Statue at Havana.—Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana, before January 20. The sum of 100,000 pesos (about £20,600) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., where also further particulars (in Spanish) may be seen.



DOORWAY TO THE CHAPTER HOUSE, EXETER CATHEDRAL.

January 29, 1912. Government Palace, Montevideo.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640, and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

January 31, 1912. Federal Capital City, Australia.—Competitive designs are invited by the Commonwealth of Australia, for the laying-out of the Federal Capital City. Premiums are offered as follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered by January 31st, 1912, to King O'Malley, Minister of State for Home Affairs, Commonwealth of Australia.

July 1, 1912. City Extension Scheme, Dusseldorf. — Premiums £1,000 and £375. Particulars from the Chief Burgomaster, Dusseldorf.

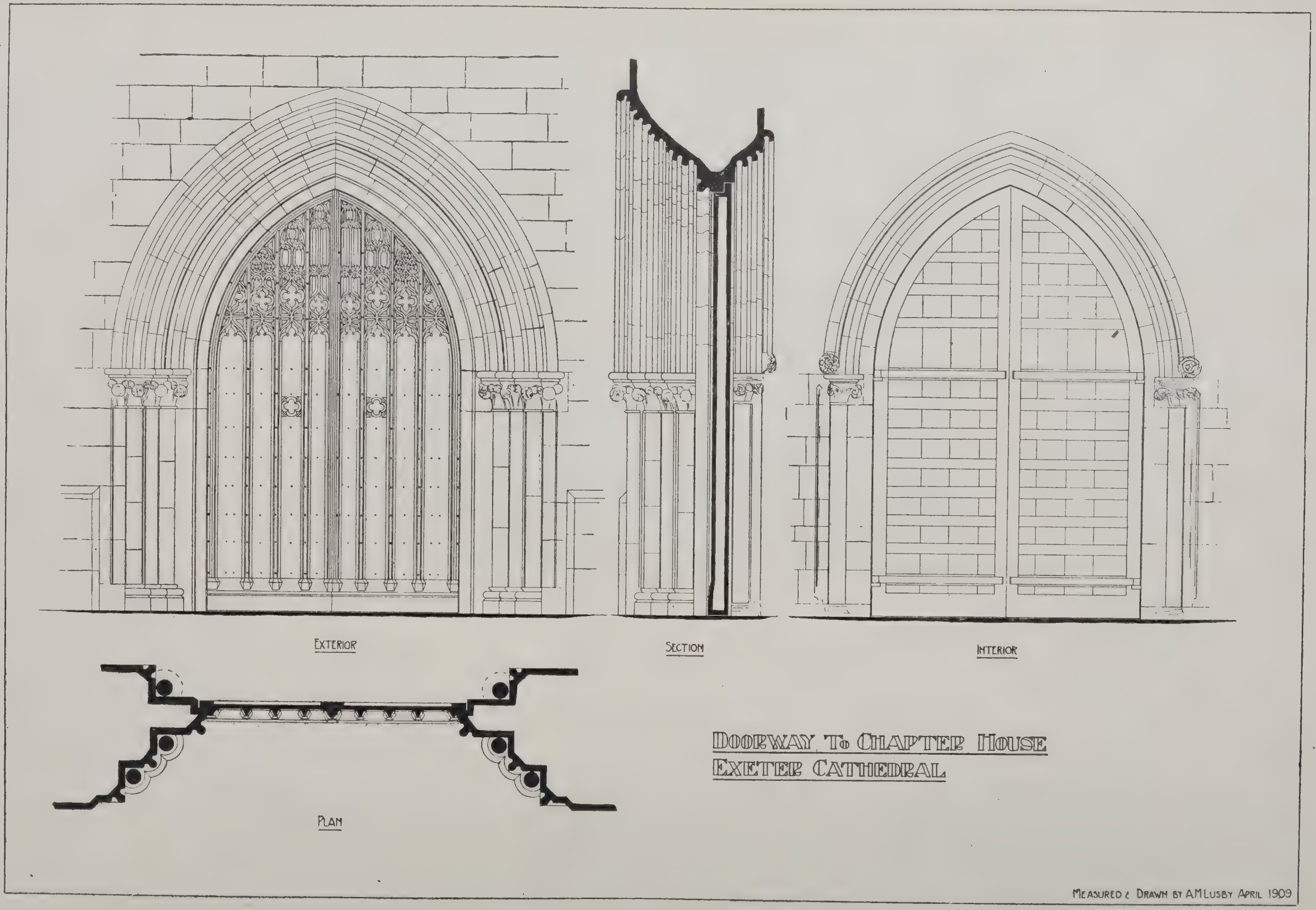
No date. Infirmary, Rochdale.—The Board of the Rochdale Infirmary have decided to proceed with a portion of a large extension scheme to cost about £16,000. It will include an operating theatre, staff accommodation, ophthalmic rooms, modernised in-patients' department, and an additional twenty-four beds. Provision is to be made for forty-eight beds at a cost of not more than £17,000. The assessor appointed for the limited competition is Mr. Alexander Graham, F.R.I.B.A., of London.

DETAILS, OLD AND NEW.-XXVI

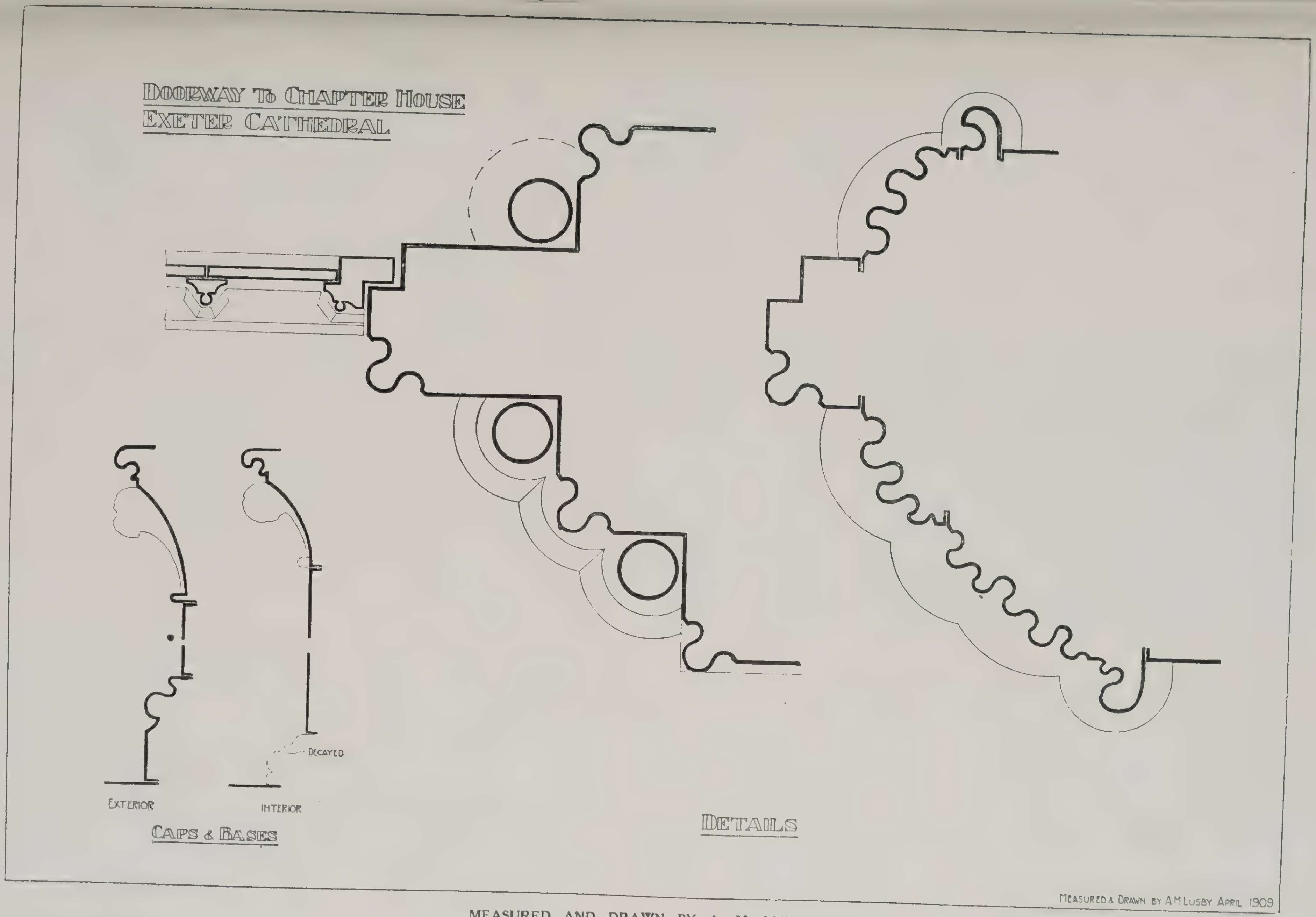
Doorway at the Chapter House, Exeter Cathedral.

The chapter house at Exeter Cathedral is a fine example of Early English architecture, having been built in the thirteenth century by Bishop Bruere. It is situated on the south side of the Cathedral, axially in line with the transepts. The drawings give all details of the doorway illustrated.

Gothic architecture does not make the same practical appeal that it formerly did. Nevertheless it is considered that Gothic examples should be included in this series from time to time, in order that the selection may be thoroughly comprehensive.



MEASURED AND DRAWN BY A. M. LUSBY.



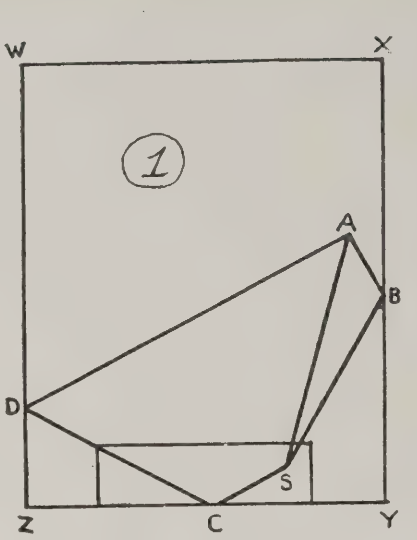
MEASURED AND DRAWN BY A. M. LUSBY.

COMPUTATION IN ACOUSTICS.

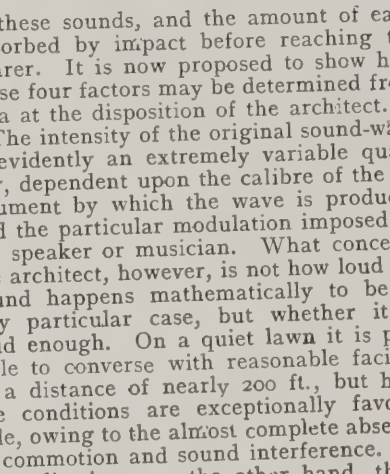
Acoustics and ventilation are two sections of architectural practice in regard to which a great deal of uncertainty exists. Strong opinions are held by the advocates of the two opposing systems of ventilation, and though there has been endless experiment and discussion, no finality has been reached, and the "science" continues to remain in a state of flux. But with acoustics there is not even the semblance of any co-ordinated system of practice. It offers a constantly varying problem, with the consequence that no one is able to guarantee beforehand what the acoustical properties of any large apartment will be. Information on the subject is scarce, and one turns with interest to whatever is published. In the "Brickbuilder" a series of articles on architectural acoustics has appeared, and from the second of these the following notes, by Mr. Hugh Tallant, are abstracted :—

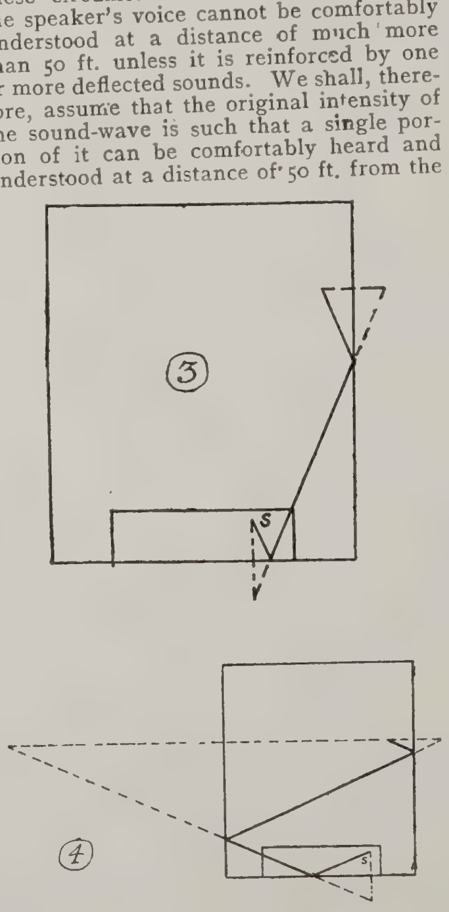
The acoustic qualities of an auditorium are dependent upon nothing more mysterious than its size, shape, material and contents, and the relative position of speaker and audience. All of these factors are known to the architect, and all except size are largely under his control. Theoretically, therefore, he is in a position to determine in advance the acoustics of an intended building, to account for the defects of an existing structure, and to make such corrections in design and arrangement as he may find necessary or desirable. The object of the present writer is to indicate how these theoretic possibilities may be practically realized. In a properly designed auditorium there is, or should be, a free and unobstructed view of the stage. Conversely, there should be a straight path by which one small portion of the sound-wave produced by the speaker's voice can travel direct to the ear of each member of the audience. This portion of the wave will be called the "direct sound." Other portions which reach the hearer from time to time by deflection from the surrounding surfaces will be called the "deflected sounds." The latter are not infrequently audible after as many as two hundred deflections—that is, after they have travelled a mile or more, back and forth from wall to wall—and as the velocity of sound is only 1,200 feet a second, some of these deflected sounds may not reach the hearer until several seconds after the direct sound. In this way a single sound-wave may be heard as a prolonged tone, which gradually dies out as the last deflected sounds are absorbed by repeated impact.

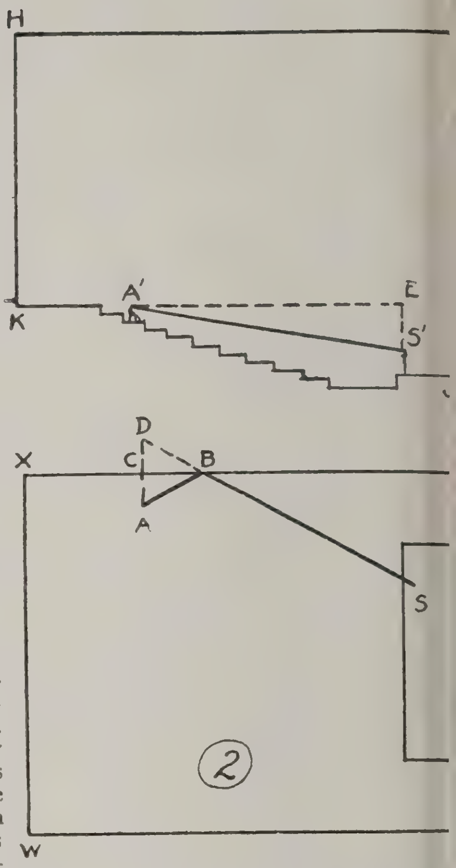
In acoustics as one-fifteenth of a second is the shortest perceptible space of time to consider, all sounds which reach the hearer within any particular fifteenth of a second combine to produce a single sensation whose intensity varies with the number and loudness* of the component sounds. For the present we are concerned with only the initial loudness—that is, the effect produced by the sounds which reach the hearer during the first fifteenth of a second. This initial loudness is dependent upon four factors, namely : the intensity of the original sound-wave, the number of sounds arriving within the first fifteenth of a second, the distance travelled by each of these sounds, and the amount of each absorbed by impact before reaching the hearer. It is now proposed to show how these four factors may be determined from data at the disposition of the architect.



The intensity of the original sound-wave is evidently an extremely variable quantity, dependent upon the calibre of the instrument by which the wave is produced and the particular modulation imposed by the speaker or musician. What concerns the architect, however, is not how loud the sound happens mathematically to be in any particular case, but whether it is loud enough. On a quiet lawn it is possible to converse with reasonable facility to a distance of nearly 200 ft., but here the conditions are exceptionally favourable, owing to the almost complete absence of commotion and sound interference. In an auditorium, on the other hand, there are always sound-eddies whose effect cannot be estimated, and also a certain amount of rustle among the audience. In these circumstances the direct sound of the speaker's voice cannot be comfortably understood at a distance of much more than 50 ft. unless it is reinforced by one or more deflected sounds. We shall, therefore, assume that the original intensity of the sound-wave is such that a single portion of it can be comfortably heard and understood at a distance of 50 ft. from the speaker; and we shall designate by letter I the intensity (whatever it ma matically may be) of a single direct so at this distance. I is therefore the tensity corresponding to minimum effic loudness; any sound or combinatio sounds which falls below this stan will not be comfortably heard and un stood.

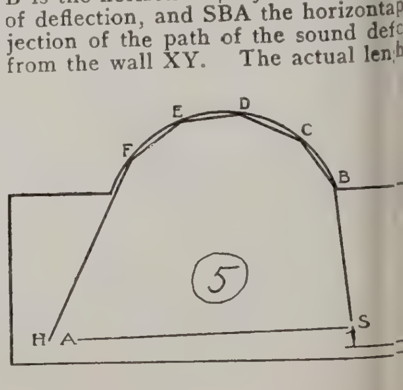






The number of sounds reaching hearer within the first fifteenth of a se can be determined directly from the a tect's preliminary drawings. Fig. 1 re sents the plan of an auditorium whose closing walls are WX, XY, YZ, and S is the speaker and A the hearer. direct sound of the speaker's voice re the hearer by the straight path SA. deflected sounds reach him by cro paths such as SBA, SCDA, etc.

The most important of the defl sounds are those which reach the h after a single deflection. The pat these sounds may be laid out by the metric construction shown in Fig. 2 this drawing WXYZ is the plan auditorium, and HIJK a vertical se The speaker and listener are respec at S and A on plan, and at S′ and section. Draw AC perpendicular to and prolong it to D, making CD to AC. Draw DS intersecting XY B is the horizontal projection of the of deflection, and SBA the horizonta jection of the path of the sound def from the wall XY. The actual len



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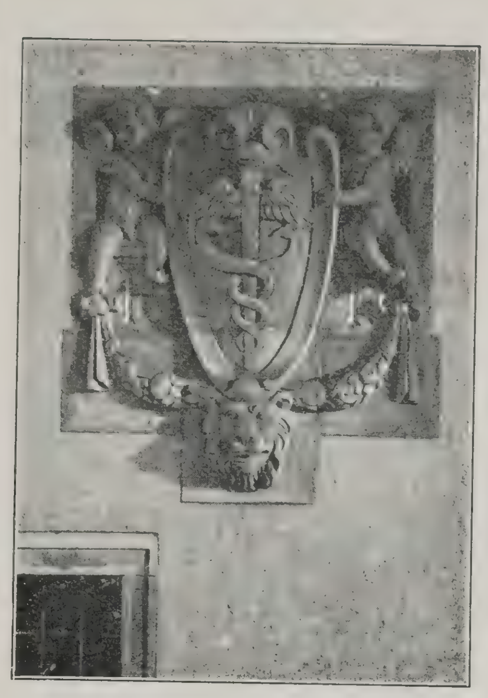
*Intensity and loudness are not exactly equivalent terms. Equal intensity corresponds to equal loudness, but an increase in intensity does not involve an equal increase in loudness. Two pigs under the traditional gate do not make twice as much noise as one. This psychological fact is, however, immaterial to the present discussion, which contemplates merely the establishment of an equality of loudness throughout the rear of an auditorium.

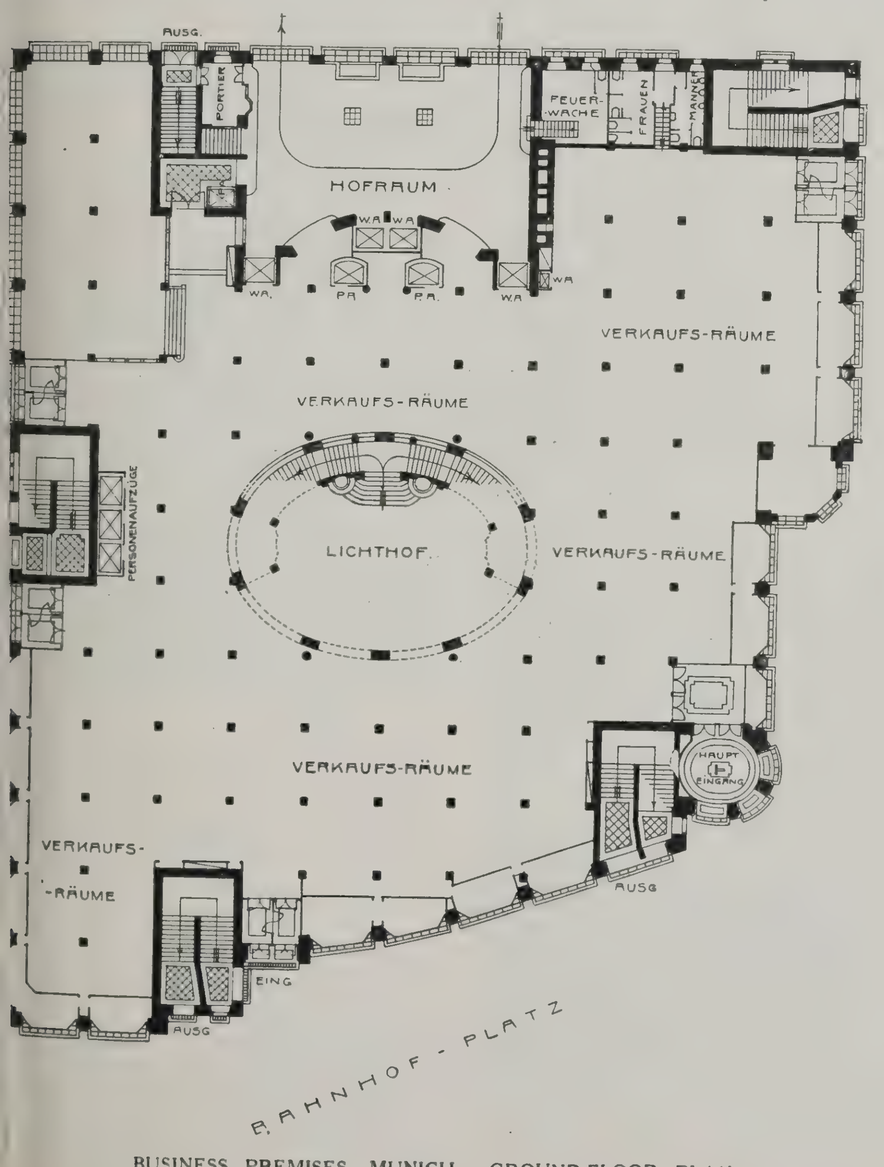
he path is evidently the hypothenuse of a iangle of which the legs are SBA nd A′S′E.

The diagram for two deflections is iown in Fig. 3 and for three deflections Fig. 4. Similar geometric figures can applied to any number of deflections, it in an auditorium more than 50 ft. in erage dimension, sounds which have been flected more than twice rarely reach the arer within the first fifteenth of a second, account of the length of their paths. course sounds deflected from the rear ll are never available, because they are ely to create sound interference. The al number of sounds which combine to oduce the initial loudness is, therefore, stinctly limited, and for a rectangular ditorium can often be estimated by eye. For curved surfaces the diagram is apt be complicated. The most convenient ocedure is to lay out the sound paths accurately as possible, and then correct m by slight alterations in direction until angles of deflection become approximly equal to the corresponding angles of idence. Frequently, however, the mber of deflected sounds and the length their paths can be estimated with ficient accuracy without an exact diam. Fig. 5 represents a section—not essarily vertical—of an auditorium surunted by a spherical dome. This secn is taken passing through S. A and the tre of the dome. SBCDEFH is laid accurately, the angles of deflection



DETAIL OF CARVED PANEL.

with the tangents at B, C, D, E and F being made exactly equal to the angles of incidence. If FH falls, as shown, just beyond A there will usually be as many



BUSINESS PREMISES, MUNICH: GROUND-FLOOR PLAN.
HEILMANN & LITTMAN, ARCHITECTS.

sounds deflected to A in the plane of the section as there are points of deflection on the path SBCDEFH—in this case five. The longest path travelled by either of these sounds is approximately SBCDEFH, and if this distance is not more than 70 ft. longer than SA, all these deflected sounds will reach A within less than one-fifteenth of a second after the direct sound. A discussion of all possible cases of curvature is of course impossible here, but the reader will readily extend the method above suggested to pendentives, niches, and other architectural surfaces.

When the principal sound paths have been plotted, their length can be scaled from the drawing, and the sounds corresponding to paths not more than 70 ft. longer than the path of the direct sound may be selected as being the ones which combine with the direct sound to produce the initial effect of loudness.

The amount of each sound absorbed by impact before reaching the hearer can be determined from the same diagram. The points of impact are all located, and the architect is aware of the material of the deflecting surface at each point. He can therefore determine the fractional part of each sound absorbed in each deflection by reference to the following table of approximate absorbing capacities:—

Absorption of Sound:

Wall, floor, and ceiling surfaces—such as wainscotting, wood or marble flooring, plaster, glass and masonry.	None.
Heavy curtains, rugs, and carpets, without batting.	One-quarter.
Carpeting upon heavy batting.	About one-half.
Cushions, ordinary upholstery, and heavy felting hung free from the wall.	About three-quarters.
Audience and very heavily upholstered furniture.	All.

The four factors of the initial intensity having been determined by the means above indicated, their combined effect can be computed by the following method:

I is the minimum efficient intensity and corresponds to the intensity of a direct sound at 50 ft. from the speaker. As the intensity of sound varies inversely as the square of the distance from its source, the intensity i of any single sound which has travelled a distance d from the speaker will be

$$i = I\frac{2500}{d^2}$$

It does not make any difference whether the distance d is travelled in a straight or a crooked line, but in the latter case proper reduction must be made for absorption by impact. For this purpose, the intensity must be calculated to the first point of deflection and then reduced by the proportionate amount absorbed in the first impact. The distance which would have caused this total reduction must then be calculated and added to the distance between the first and second points of deflection. The intensity at the second point of deflection may then be calculated, further reduction made for the loss due to the second impact, and so on until the sound reaches the hearer. In this way the final intensity of each sound reaching the hearer within the first fifteenth of a second may be determined. These intensities may then be added together. If the total is as great as I, then the combined effect of the component sounds will be loud enough. If the total is less than I the combined effect will not be loud enough.

OUR PLATE.

The "Ship" Institute for Deep Sea Fishermen, Newlyn, Cornwall.

This building, the gift of Miss Bolitho, of Penzance, to Newlyn, is to be completed in November, when it will be handed over to the Royal Mission to Deep Sea Fishermen. It is happily situated between the Quay and the little river which washes its eastern side, and will form a sort of club for the fishermen, native and foreign, who frequent this busy fishing port. It is built solidly of local granite, and roofed with grey Delabole slates.

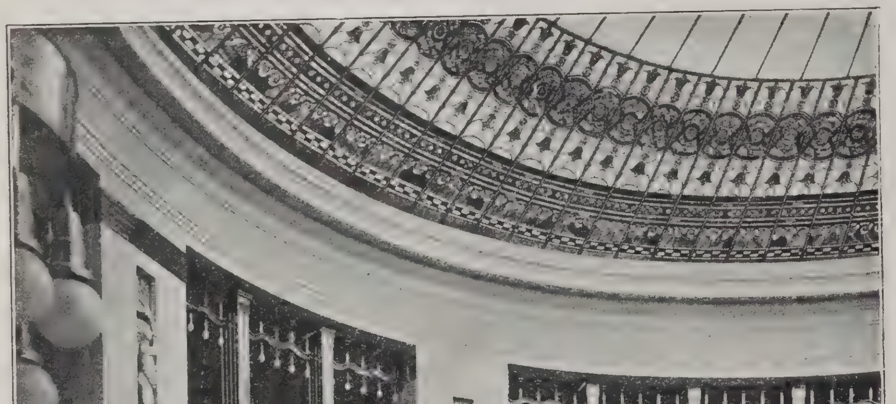
The chief room for general assembly is the common room, which, with its bar, occupies most of the ground floor. Overhead are a meeting room, a writing room, several cubicles and bedrooms, bathrooms, and a lavatory. The caretaker's dwelling, with kitchens, office, and yard, occupy the southern end of the narrow site, which has proved to be only just large enough for the purpose.

The contract, as a result of competitive tenders, was awarded to Messrs. W. E. Blake, Ltd., of Plymouth.

The walls of the common and meeting rooms, entrance hall, and passages are lined for a height of about 6ft. with vertical oak boarding. The gilt ship on the weather-vane is being carried out by the Newlyn Industrial Class. Amongst the sub-contractors are Messrs. Wainwright and Waring for casements and leaded glazing; Mr. Gilbert, of Newlyn, for plumbing, etc.; and Mr. Laurence A. Turner for modelling and stone carving. The architect is Mr. Edward Warren, F.S.A., F.R.I.B.A., of London.

BUSINESS PREMISES, MUNICH.

Munich is a city where art work is very actively taken up, and it has been the home of many extraordinary movements, such as that represented by the Seccessionists. Architecture, no less than the other arts, has fallen under the spell, and as a result we see a great number of buildings in which the designers have set out to secure originality at any cost. This work has, very rightly, been decried by those who fail to see the merit of throwing all tradition overboard. Still, the movement has its good points, primarily in introducing a fresh note which is of interest. The accompanying illustrations of the business premises of Hermann Tietz, on the Bahnhof Platz, at Munich, are worthy of study in this connection, the architects, while eschewing the stock-in-trade of the ordinary practitioner, having kept themselves well under contro



BUSINESS PREMISES, MUNICH: VIEW IN OVAL LICHT WELL.

NEWS ITEMS.

Regent Street Polytechnic.

The new Polytechnic building in Rege
Street, erected at a cost of £90,000, h
just been opened. Mr. Frank T. Verit
F.R.I.B.A., was the architect.

The French Renaissance.

"The Architecture of the Renaissance
France, 1495 to 1830," by W. H. War
M.A., is a book announced by Mr. Ba
ford for publication during the prese
month. It is the first work in any langua
to trace the complete development of th
brilliant period of art, and it will be fu
illustrated by photographs, drawings, a
reproductions of contemporary engravin

Improvements at Glasgow.

The Committee of the Glasgow City I
provements Trust have resolved to reco
mend the Corporation to apply for Parl
mentary powers to borrow £100,0
Among the objects for which the propo
is made are the completion of the buildi
which are being erected in Bell Street a
High Street, and the reconstruction
the Tontine Buildings, which were recen
destroyed by fire.

Cost of the College of Art, Edinburg

The cost of the building and equipm
of the new College of Art, Edinburgh,
expected to reach £76,000 or £77,0
Towards this the Government has cont
buted £40,000 and £20,000 has be
obtained from private donors. The defi
—£16,000 or £17,000—will probably
supplied from the profits of the Elect
Lighting Committee.

A Scottish Memorial to King Edwar

In Crathie Church, N.B., last week
King unveiled a communion table a
screen recently erected at the east end
the chancel in memory of King Edwa
The table (executed by Messrs. Galbra
and Winton, of Glasgow) is of Ic
marble. The screen behind it (execu
by Messrs. J. and A. Ogilvie, of Aberde
is 8 ft. high, executed in wood 300 ye
old, taken from a country house in Leic
tershire. Messrs. A. Marshall Macken
and Son, of Aberdeen, were the archite

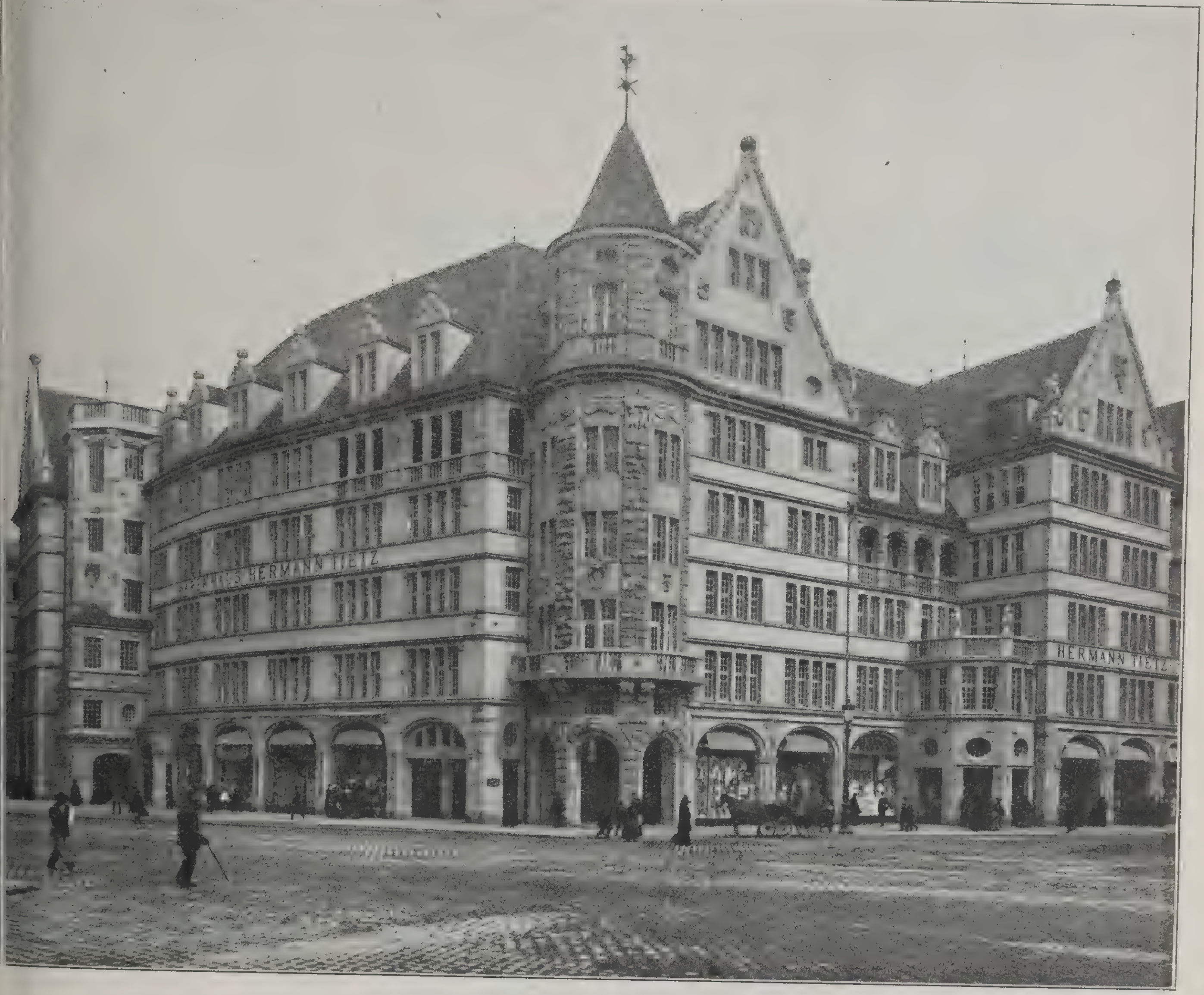
New Bridge for Paisley.

The new footbridge over the river C
at Carlisle Quay, Paisley, is built on
Scherzer principle, which is that of
rolling lift, so that instead of opening fr
the centre the bridge lifts entirely fr
the west side. This is accomplished b
ballast of 80 tons (the weight of the bri
itself), and with electric power the lift
be performed in two minutes. By h
power, however, the operation would t
half an hour. All the necessary machin
for opening is accommodated in a ca
built in the structure. The span is 93
Sir William Arrol and Co. were
engineers.

Restoration at Old Chelsea Church.

The work of repair and investiga
which has for some time been in prog
at Chelsea Old Parish Church has
been temporarily suspended. It was a
cipated that the clearing of the old chu
yard would lead to the identificatio
the graves of several notable persons;
the expectation has not been realised.
investigators can, however, pride th
selves on having vastly improved the
red-brick church, where Sir Thomas M

ancellor of King Henry VIII. and victim his displeasure, once worshipped. For tance, the floor has been concreted and aid; the red tiles which formerly disured the More Chapel have been reved, disclosing the tombstones of Sir lliam Milman, an eighteenth century rister-at-law, of Arthur Gorges, of holas Ray, and other worthies. The rthumberland tomb, once desecrated by uilder who put a pew there with the ect of getting the rent thereof, has been ored to something like its original n. The ugly deal benches have been ured out of the chancel and replaced by stalls in keeping with the carved pul- which has been scraped and cleaned. aster which hid the chancel roof has removed, and the beautiful oak which experts declare to be of th century workmanship, may now n in something like their original on.



BUSINESS PREMISES, BAHNHOF PLATZ, MUNICH. HEILMANN AND LITTMANN, ARCHITECTS.

uilding Scheme at Newport.

borough architect of Newport has nstructed to prepare sketch plans providing Assize Courts and addi- town hall accommodation on the town hall site, with certain addi- it; (2) for extending the existing ll for municipal purposes, by utilis- premises belonging to the Corpora- nd providing Assize Courts, Law and Police Courts, and police office accommodation on a separate site; (3) providing a new town hall, with Assize Courts and all other desirable public accommodation, upon some other site.

Belgian Cement Export.

During the first seven months of the current year Belgium exported 435,644 tons of cement, compared with 410,929 tons for the corresponding period of 1910. The best customer was Argentina, to which country 98,810 tons were exported, against 82,875 tons during the first seven months of the previous year. The export to Holland showed an increase from 76,904 tons last year to 88,607 tons this year. To Germany 49,367 tons were exported, against 65,104 tons, being a decrease of 15,737 tons as compared with the corresponding period of 1910. The export to England amounted to 35,151 tons, to Brazil 24,206 tons, to France 23,606 tons, to Egypt 17,281 tons, and to Turkey 14,706 tons.

A Model of the Fortune Theatre.

Professor Brander Matthews—who is equally well known in England and America as an authority on Shakespeare and the Elizabethan drama—has acquired for Columbia University a model of the Fortune Theatre, which was recently described and illustrated in this Journal. The model has been constructed in two sections by Mr. James P. Maginnis, of Carteret Street, Westminster, from drawings and details supplied by Mr. William Archer and Mr. Walter H. Godfrey.

The Demolition of Trentham Hall.

Trentham Hall is about to be demolished. Portions of the structure, together with fixtures, fittings, panelling, carved and decorated ceilings, mirrors, etc., will be offered for sale by auction towards the end of this month. The sale will include the great central tower, one of the principal architectural features of the hall. The carved woodwork and ornamentation of the billiard room, with medallions of Shakespeare, Chaucer, Spenser, Milton, and other great English poets, are expected to command attention from buyers throughout the kingdom. The sale will also include the Duke's study.

Discovery of Old Altar Tombs.

During alterations in the floor of the chancel of Little Easton Church, Essex, it was found that the double altar tomb between the chancel and the Maynard Chapel extended a foot below the present level of the floor, and a beautifully carved plinth was brought to light. On it are two brasses—one of Henry Bourchier, Earl of Essex, and one of his wife, Isabella, of

York, aunt to King Edward IV. On the north side of the chancel was found the base of an altar tomb of the Louvain family, dating from the time of Edward the Confessor. A more ancient floor of the church was also found. The work has now been stopped by Lady Warwick, the patroness of the benefice, until an architect has been consulted.

King George's Statue at the Crystal Palace.

The first statue of King George V. to be completed will shortly be unveiled in the grounds of the Crystal Palace. The statue, which is of bronze, represents His Majesty in Coronation robes, and measures 16 ft. in height, the figure and pedestal combined standing 41 ft. above the granite steps of Empire Avenue, upon which it is erected. The sculptor is Mr. Arthur Rogers, of Manchester.

Scottish Building Trade Depressed.

At the seventeenth annual general meeting of the Scottish Building Trades Federation held in Aberdeen on September 8th, the president of the local branch of the federation, Mr. Leslie, expressed regret that the depression in trade still continued. Reports showed that, speaking generally, no improvement had taken place. From practically all sources the reports were of a very depressing nature. In Edinburgh and district alone there was a slight improvement, and there it was not general, but accounted for by one or two important contracts of a public nature. The prospects were not encouraging.

The New Roof of Glasgow Cathedral.

The new roof of the choir and choir aisles of Glasgow Cathedral has now been completed, with the exception of the decorative carving of the ceiling, and work has commenced on the roofs of the nave and transepts. The oak timbers were in a dilapidated state, and pine has been substituted. The plaster ceiling has also been removed, and it is now apparent that there have been two plaster ceilings, and that originally the roof was an open timber one. The roof has evidently been off several times since it was originally constructed. The lead covering which has been removed was quite modern. The oldest lead was that which covered the south transept. It bore the cast inscription "Andrew Al Provost, 1739." Mr. Oldrieve, C Architect for Scotland, has charge of work.

Reconstruction of Some Glasgow A Galleries.

The galleries of the Fine Art Instit in Sauchiehall Street, the property of Corporation of Glasgow, are to be re structed on a large scale. The work not be completed till the beginning of Under the new arrangement the galle will be leased for five months of the to the Royal Institute, and during the o months they will be let by the Corpora as may be required.

An Exhibition of Patents.

It is proposed to establish in Lond Permanent Exhibition of Patents. Acc ing to the scheme the exhibition wil situated in a central position, and wil open to the public all the year round, no charge for admission. The obje the exhibition is to establish a ce where inventors may display their pat for the purpose of attracting the atten of possible purchasers. Visitors wil conducted through the various section expert demonstrators, who will not onl able to point out the merits of each pa but will be able to quote their price any country in the world.

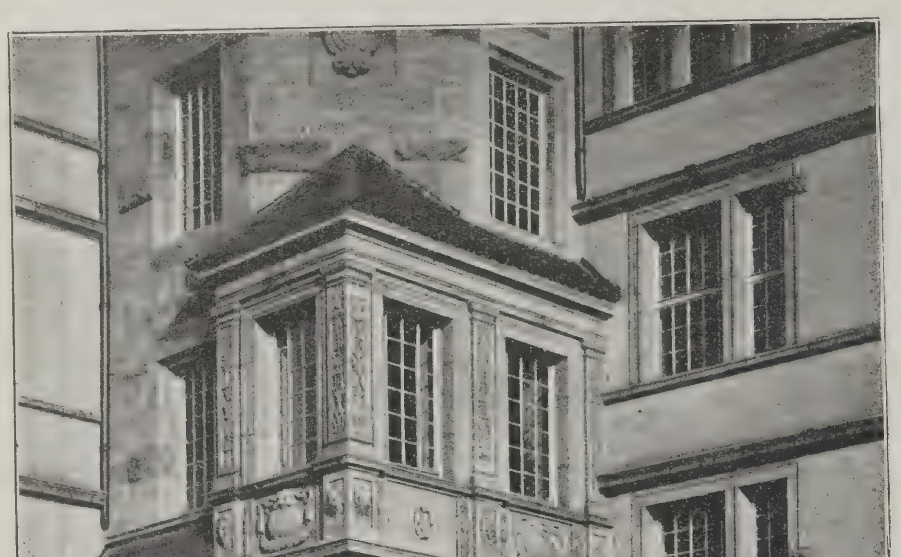
The Stones of Paisley Abbey.

The block of old houses which have been demolished in Gauze Street, Pai adjoining the Abbey, were of some quity, and contained one or two curios of importance, which are being care preserved. The chief interest, howe lies in the fact that they were almost tirely built of old stone from the ad ing Abbey. A number of these have mediæval mason marks quite cle visible upon their faces, while sev moulded stones, portions of mullions windows, jambs from doors, etc., have been found among the debris. These been carefully laid aside in the hope they may be of service in the restor of the choir of the Abbey.

Alterations at Baker Street Station

The improvements which are carried out at Baker Street Station o Metropolitan Railway involve the plete reconstruction of the station. improved service of through trains be provided from the St. John's Wood tion of the line, which is being widene some distance. This part of the wo in the hands of Messrs. Perry and The existing tunnel towards Clarence is being replaced by a concrete co way, the walls for which have now completed. The work of stripping tunnel has been started, and use is made of a special shield designed by H. A. Bartlett, which weighs six tons which can be moved from section to tion, as the work progresses, in abo hour. In all about 57 girders have placed in position; ten of these, inclu the heaviest, which weighs about 54 have already been lowered. The wo proceeding day and night, and shou completed bv the end of March.

A new station is to be built in Ma bone Road, approached by a private which will be flanked by an ornam screen. A block of flats will be erect the site to be formed over the ent to the St. John's Wood section of the



BUSINESS PREMISES, MUNICH: DETAIL OF FACADE.

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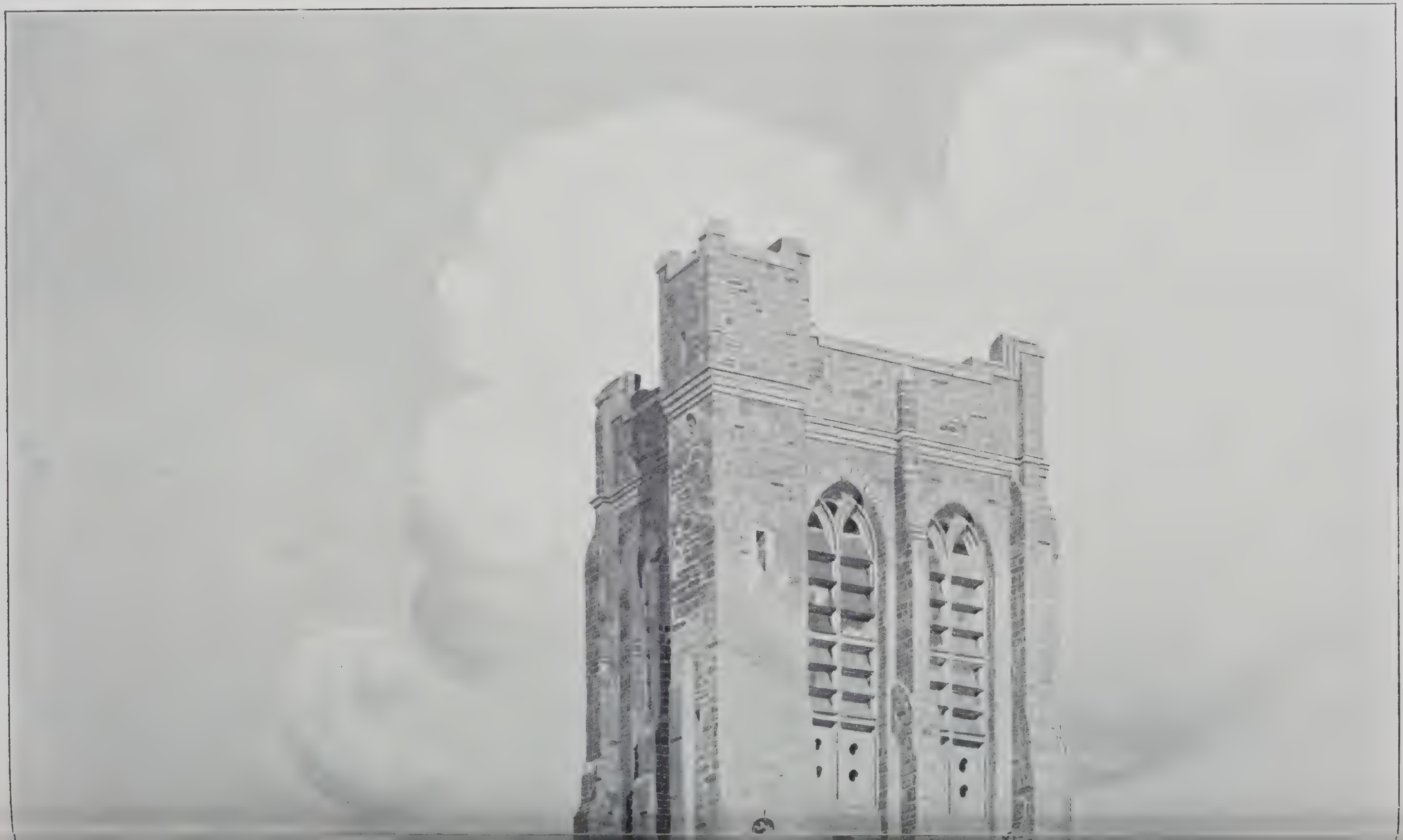
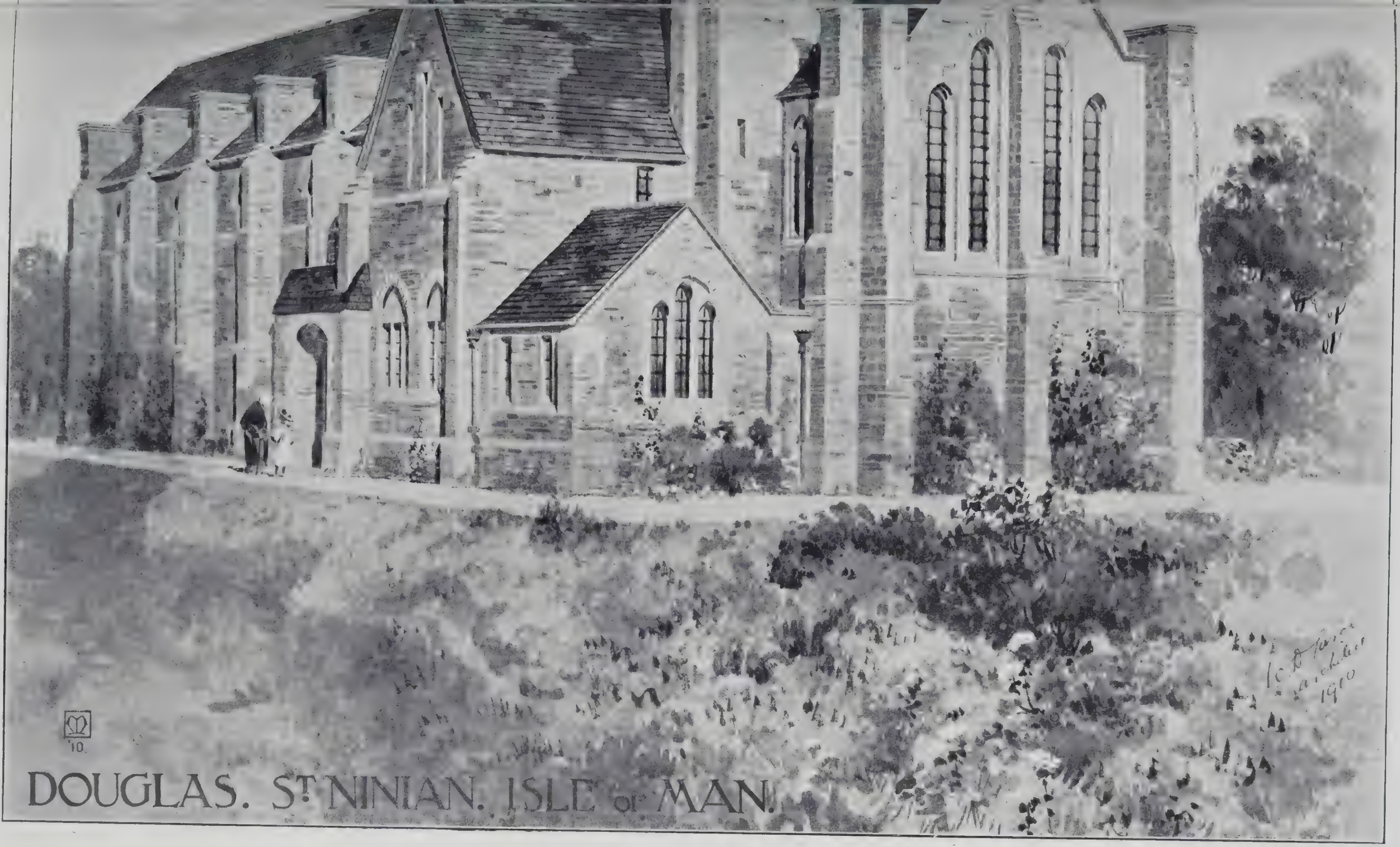
Supplement to The Architects' and Builders' Journal, *Wednesday, September 27th*, 1911.




DOUGLAS. St NINIAN. ISLE of MAN.
'10.
W D Caröe architect 1910

W. D. CARÖE, F.S.A., F.R.I.B.A., ARCHITECT.

(Royal Academy Exhibition, 1911)

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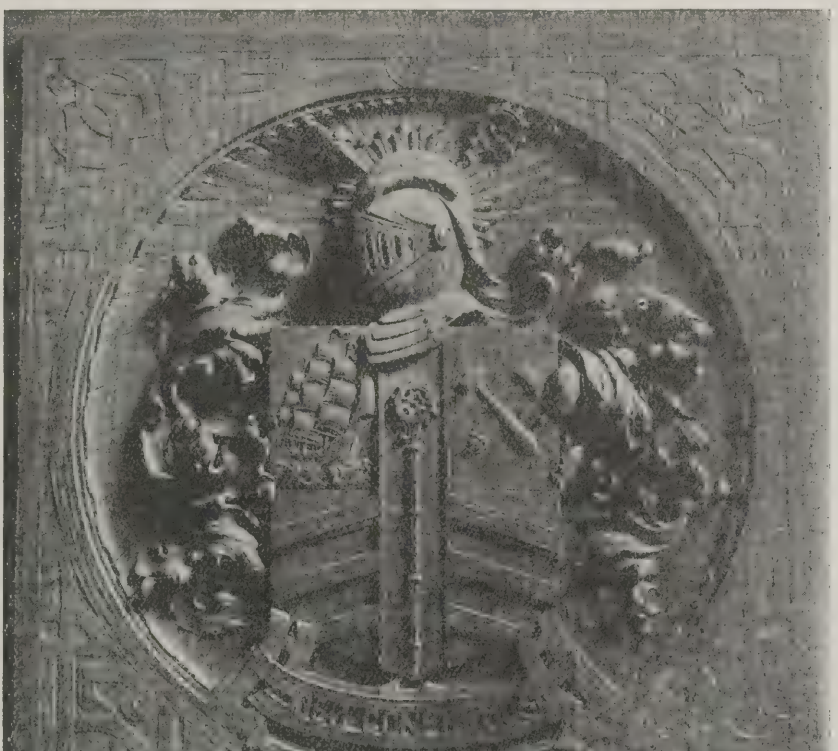
THE ARCHITECTS' &
BUILDERS' JOURNAL.

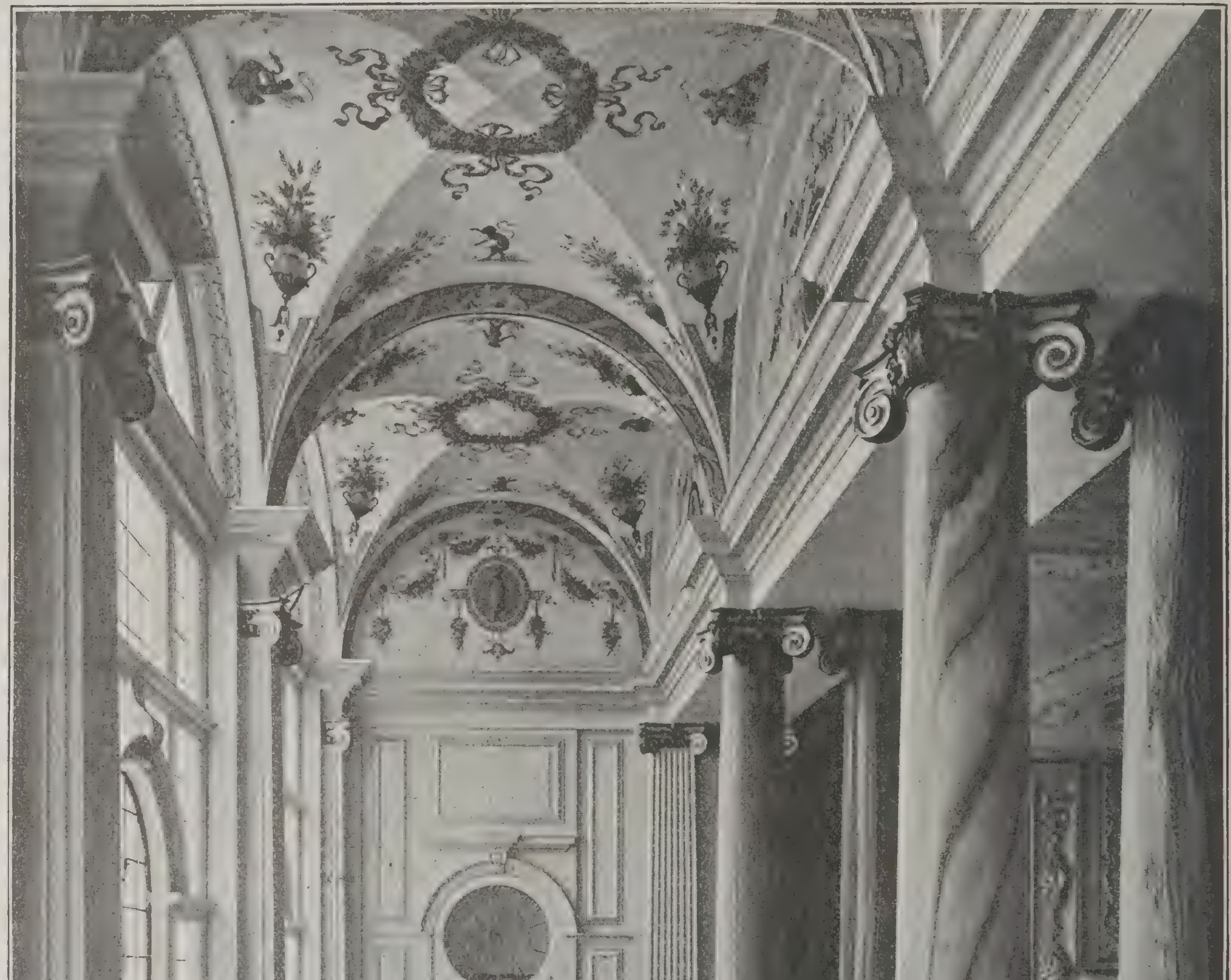
WEDNESDAY,
SEPTEMBER 27th, 1911.

Volume XXXIV. No. 870.



A CARVED WOOD PANEL EXECUTED AT THE SCHOOL OF ART WOOD-CARVING.

(*See page 337.*)



This loggia has superseded the old conservatory in the house, the three openings into the latter having been removed and the wall above carried by iron girders over the Cipollino columns. The ceiling was decorated by Florentines. The floor is of Cipollino with Siena and black squares around, enclosed by bands of white marble.

THE LOGGIA, NO. 11, HILL STREET, LONDON, W. J. LEONARD WILLIAMS, F.R.I.B.A., ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

SEPTEMBER 27th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 870.

NOTE : The List of Contents will be found on page IV. of the front advertisements.

French Renaissance Architecture.

THERE is no chapter in architectural history more interesting, or more picturesque in its results, than that which marks the commencement of Italian influence acting on French architecture. The Renaissance in Italy brought about the frank adoption of Classic forms of architecture long fore its influence was manifested in the same manner France. Italy had been itself the land of development of the great Roman style of architecture; her il was covered with its monuments; and she had no great d imposing mediæval style to look back upon. France, ough not without her remains of Roman architecture, had such great centre of them as existed at Rome, and she d developed the greatest of all mediæval styles, which uld not lightly and easily lose its hold on the country. So at in France there was no sudden overturning of the existg style for the sake of classical precedent. Rather there y be said to have been, at the latter part of the fifteenth tury, a kind of gradual filtering into France of Italian ste and Italian artists, arising first, Mr. Ward suggests,* om the Italian campaigns of Charles VIII., which brought lian art and artists within the knowledge of the French g and nobles. Hence arose a feeling that "we must have nething of this kind in France," and invitations to French lptors, ornamentists (hardly architects), artists of various es, to assist in the design and decoration of the châteaux the French nobility. But late Gothic still kept its hold the general idea of architecture; and we find examples detail and general design that are essentially Gothic, ngled with suggestions from Classic ideals. In Mr. Ward's k are two most characteristic examples, facing each other opposite pages; the font canopy at Bretagnolles, which Gothic in the pierced panels at its base and Renaissance in upper-works; and the Easter sepulchre at Solesmes, ked by pilasters filled with carved ornament of the Italian naissance type, but with a frieze of late Gothic tracery at top. At Châteaudun the disposition of the windows has regularity of an Italian palace, and the horizontal line the roof is unbroken, yet all the details are Gothic, though a very late stamp. Mr. Ward defines the position thus:—

> "The Italian architect, on arriving in France, was confronted with the task of reconciling a number of conflicting onditions. He had the support of his patron, who had been n Italy, or at any rate admired things Italian, and he was seconded by a certain number of Italian sculptors, abinet-makers, and painters. But he had against him the whole body of tradition, and of conservative, untravelled pinion. Even the patron's enthusiasm for the Renaissance would not carry him the length of surrendering things he ad always been accustomed to. The architect was in fact often called upon to effect a revolution without altering nything, and was driven to compromise, to accommodate is design to French prejudice, habits, and climate. High oofs and low storeys, towers indicative of feudal rights, raditions of planning, familiar outlines, all had to be etained."

A hybrid style was the obvious and inevitable outcome of such a state of things; but it was a hybridism of a very picturesque type. And when, under the influence of Francis I., the Italian elements in French architecture became more comprehensive and decisive, the early French Renaissance was still something totally different from anything that had been seen in Italy, something pervaded with the memory of Gothic architecture. Take the sketch of a corner of the courtyard at Azay-le-Rideau, for instance (Fig. 1, p. 320); there never was anything in the least like that in Italy; in spite of the pilasters flanking the windows, and the style of the decorations to the gables of the dormers, the feeling of the whole is much more allied to mediæval than to Renaissance. The style known as Francis I., less clean-cut, less austere, than the Italian Renaissance, has something about it more picturesque and more sympathetic; among what may be classed as the substyles of the world (for it is not one of the great typical styles), it is perhaps of all others the most pleasant and inviting for secular buildings, more especially for mansions in which architectural dignity is to be combined with a home-like appearance. It is the combination of the pilaster with the mullioned window which, more than anything else, produces this result; a combination which French Renaissance may claim as its special property, since the English work of the same kind is only an imitation of it. But with all its charm we quite concur with the author of the book before us in the opinion that the style "lacks the sense of the monumental." For this quality, in the sixteenth century, we must hark back again to Italy.

If the recollection of Gothic imposed itself on the early French Renaissance in secular buildings, it was natural that it should do so more persistently in ecclesiastical architecture. The period, it is true, was not a great church-building one in France. The religious element in France had become much enfeebled; society had become secularised, and architecture with it; châteaux became more important than churches. But when churches were erected it was natural that the precedents of mediæval church-building should still assert themselves strongly. It was impossible, whatever novel elements of detail might be introduced, that the great leading lines of the cathedral church, sanctified by five centuries of precedent, could suddenly be ignored and a new form of church instituted. Accordingly we find, in various instances, churches built which retained the mediæval plan and structure, the *chevet* and the flying buttress, translated, as it were, into a new language of detail. St. Pierre, Caen (Fig. 2), is an example of this. There are the *chevet* chapels and the flying buttresses, but the chapels have round-headed instead of pointed windows, and the buttresses and their finials, and the spandrel carvings of the windows, show a kind of half-playful reference to Classic forms. Oddly enough, the clearstory windows are nevertheless pointed, and were probably filled with tracery; that which is now there, as shown in the illustration, is modern, but is presumably a restoration. In St. Eustache, at Paris, this mediæval ordonnance of buttress and flying buttress is represented in much more classical form, and with all the windows round-arched, but still filled with tracery in the heads, but very poorly designed tracery; an attempt at the imitation of Gothic

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"The Architecture of the Renaissance in France. By W. H. Ward, M.A., R.I.B.A. London: B. T. Batsford. 30s

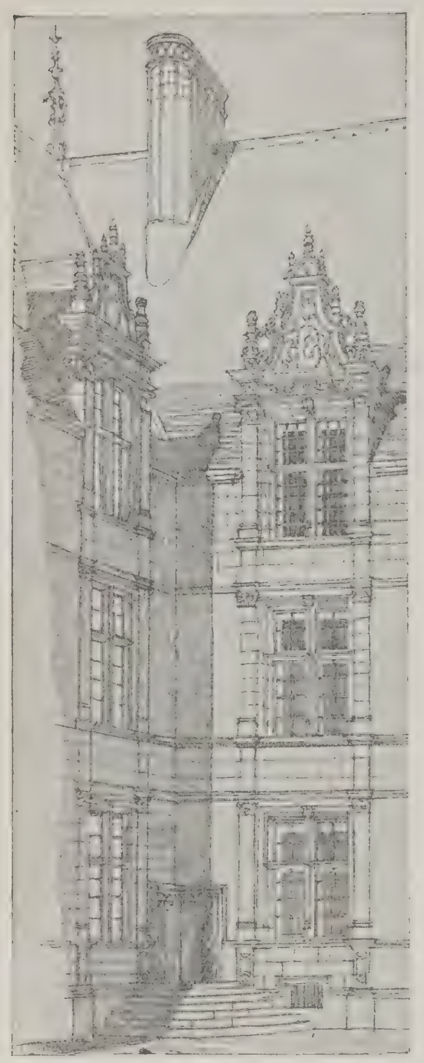


FIG 1. PART OF AZAY-LE-RIDEAU. (FROM A DRAWING BY G. G. WORNUM.)

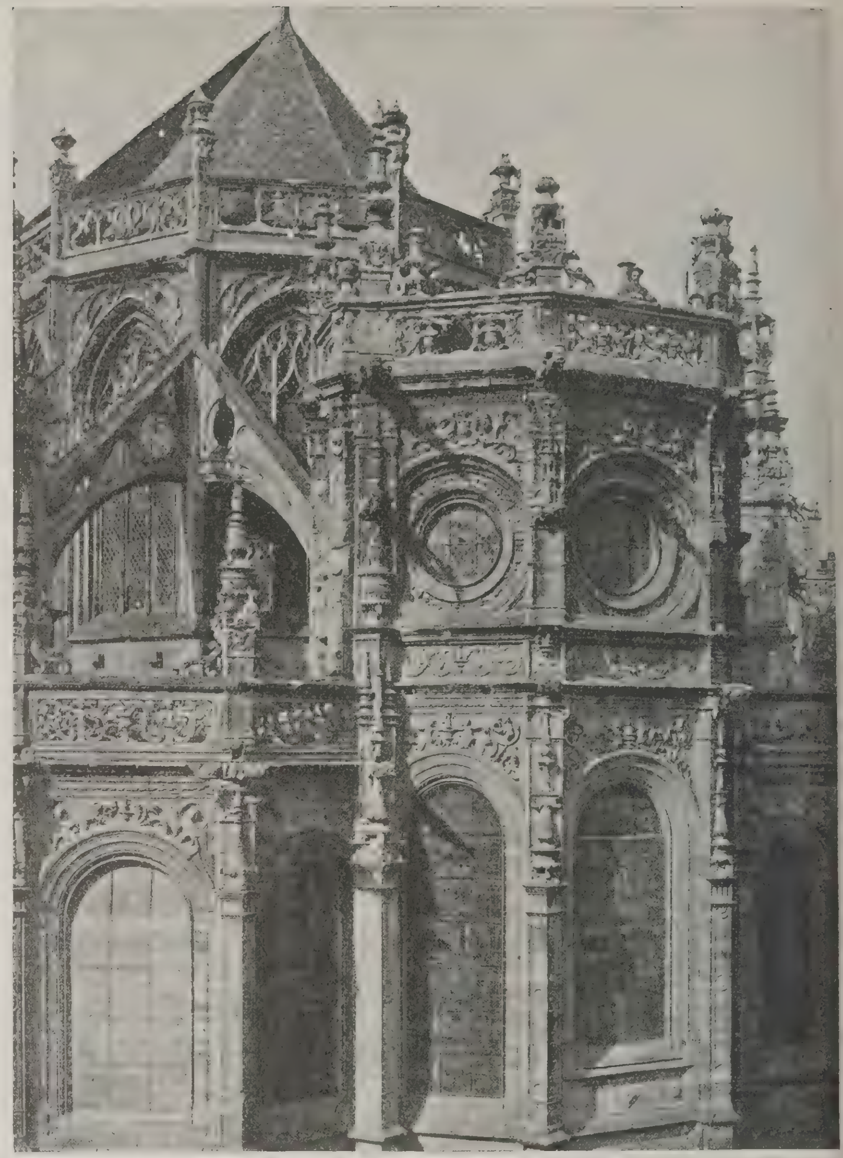


FIG. 2. CHURCH OF ST. PIERRE, CAEN.

From "The Architecture of the Renaissance in France" (Batsford.)

tracery in a very inferior form, St. Eustache is one of the most curious examples in existence of the attempt to carry out in a new style the leading forms and structure of an old one. It was not till nearly a century later that the French had frankly adopted the Italian ideal of the church plan with a central space and a dome over it, and carried this out, in the church of the Sorbonne, in the complete fashion of the Italian Renaissance, troubled by a reminiscence of Gothic; to be followed by Val de Grâce, and the Invalides, and Ste. Geneviève (now the Panthéon).

In secular architecture the period of Francis I., with its combination of mullioned windows with very free classic (or quasi-classic) detail, was followed later in the century by a phase of style more distinctly classic, of which the Archbishop's Palace at Sens (Fig. 3) is a type. The mullioned and transomed windows have now disappeared, and with them the last hint of Gothic reminiscence; and yet there is something peculiarly French about this architecture, and quite different from Italian Renaissance. It is still, like the Francis I. style, less monumental than the Italian work; yet on the other hand there is something peculiarly refined and pleasing about it, and peculiarly French. But the development of the French Renaissance ideal proceeded rapidly now, or perhaps we owe something to the individual genius of Lescot; for his portion of the west side of the Louvre courtyard, while it is still essentially French in its grace and elegance, is something far in advance of the rather naïve grace of the building at Sens, though but a few yea
separated the two. Doubts have been thrown, though
think with hardly sufficient reason, on the attribution of th
part of the Louvre to Lescot (assisted by Jean Goujon
sculptor); but whoever was responsible for the design,
can only agree with the judgment of our author, that "t
perfection of proportion, the delicacy and distinction of t
detail, and last, but by no means least, the excellence of t
sculptural decoration, conspire together to render this cou
of the Louvre one of the great architectural achievements
the world." Different portions of the court façades are
different hands, but it was Lescot's portion which gave t
key-note of the whole.

Mr. Ward has made a useful feature in his book by givi
us reduced reproductions of Mariette's illustrations of t
Tuileries, published in 1727, showing the rather curious a
unsatisfactory conglomeration of buildings which former
stretched across from the Pavillon Marsan to the Pavill
Flore, following the eastern margin of what is now the R
des Tuileries. In the façade as existing in 1610 they sh
different blocks by de l'Orme, Bullant, and one of the
Cerceaus, each apparently treated by the architect at
own will and independent of any connection with the adjoi
ing blocks in regard either to scale or design; and even t
façade as remodelled by Le Vau in 1700 is not much m
coherent. The very existence of this cross block is near
forgotten now, though it only disappeared as late as t

nmune insurrection after the 1870 war, when it was thought worth while to restore the burnt-out buildings. ir destruction was not much to be lamented from an itectural point of view, and Paris gained a grand open e by the change.

fr. Ward does full justice to the merits of Mansart's alides church, but we cannot agree with him in his admira- of the same architect's chapel at Versailles, at all events of the exterior, which is what we should call "bumptious" itecture; it is better than the rest of Versailles, certainly, that is not saying much. The effect of the two-storeyed rior is no doubt fine, but in a rather obvious kind of way. Panthéon he characterises (and we agree) as "the greatest evement of the whole century [the eighteenth] in church- ding"; it is open to some criticism, certainly, but it is a ime building; and while it is no doubt true that the un- en mass of external wall gives no indication of the fact the interior design is in two storeys, we do not think flot has been done justice to for his boldness in thus aling to our sense of size and scale by this immense mass all; a great architectural rock, as it were, on which the e stands. In spite of the charge of falsity to the interior ngement, we prefer to see it as it is.

is to be noticed that in the early period of the French aissance the architects mostly avoided the system of using ge Order of columns or pilasters running through two or storeys. The special note of the Francis I. style was the oyment of separate pilaster orders in each storey, and great court of the Louvre, which in architectural elabora- goes far beyond the general type of the Francis I. style, separate treatment of the Order for each storey was for- ely maintained, to the great improvement of the archi- re. A fine piece of architecture with the colossal order however, produced in the south gallery of the Louvre, in 1595 under Henri IV., probably by the du Cerceaus. wing was entirely rebuilt in 1863 by Lefuel, under leon III., but the design of the original, while it was still in existence, was reproduced by Percier and Fontaine in part of the north gallery built by them in 1806. Fergusson has spoken very unkindly of this design, which in fact (once allowing for the illogical use of a one-storey order in a two-storey building) is a fine piece of academical architecture, far superior to most productions of the same type. The grouping of the pilasters, with alternately an angular and a curved pediment over each group of four, has a fine and broad effect, all the better from the fact that the pilasters are kept very flat, with but slight projection, so that they appear frankly as a form of architectural expression and not as pretending to be supports. The appearance would be very much better if there were a balustrade between the pediments and a flat roof, instead of the visible sloping roof with its patchwork of skylights. But the design shows at all events that real architectural interest can be given to this academic type of architecture, and that its success or failure depends not so much on the materials as on the way they are used. The difference can be seen by comparing this design of du Cerceau's with the mechanical architecture of the Palais Royal (Fig. 4) by V. Louis, two centuries later. It was to this that French Renaissance had fallen since the days of the Louvre.

We have but touched on two or three of the points suggested by Mr. Ward's book on this great and in the main noble chapter in the history of modern architecture. We recommend our readers to get the book, and study it for themselves. There may be conclusions in it in regard to which, as Mr. Ward admits, there will be differences of opinion; but for the book as a whole there can be nothing but praise. The author has thoroughly made himself master of his subject, and has throughout treated the architectural history in connection with the social and political history of the times. The illustrations, though necessarily on a small scale, are numerous enough to

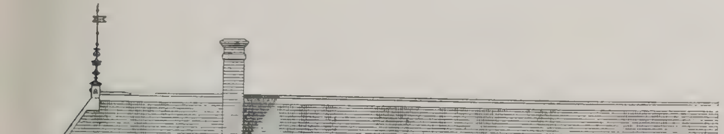

SCALE OF 10 5 0 10 20 30 FEET
SCALE OF 1 0 1 2 3 4 5 6 7 8 9 10 METRES

FIG. 3.—ARCHBISHOP'S PALACE, SENS.

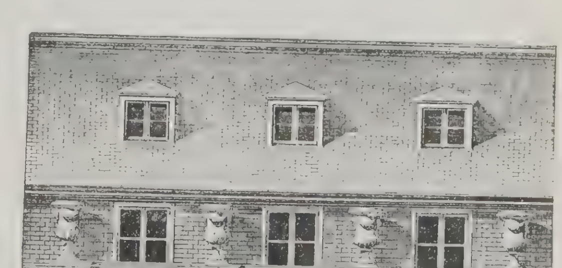


FIG. 4.—GALLERIES OF THE PALAIS ROYAL.

From "The Architecture of the Renaissance in France."

form a complete epitome of the progress of the style. In short, it is one of the best books on a special phase of architectural history that have ever been produced on a scale suited for general reading.

An "Old London" Exhibition.

THE autumn exhibition at the Whitechapel Art Gallery will be devoted this year to "Old London." In the Upper Gallery will be shown a collection of oil paintings, water colours, and prints of the seventeenth, eighteenth, and early nineteenth centuries, and it is hoped that the loan of a thoroughly representative collection of the works of Samuel Scott and his school may be obtained. The small Gallery may very probably be devoted to a special collection of views and relics connected with the history of Stepney. In the large Lower Gallery will be placed models, relics, and recent paintings and photographs of vanished and vanishing London, while it is hoped to arrange, in another part, small sections illustrating Roman, Saxon, Norman, Plantagenet, and Tudor London, which will lead up chronologically to the Stuart and Georgian paintings and prints in the Upper Gallery. It is hoped that the authorities of the University of London may be able to arrange courses of afternoon and evening University Extension lectures on the history of London, which will further illustrate the subject. The Exhibition will not be confined exclusively to pictures, the Trustees having decided to include as well statues, stone-carving, woodwork, sign-boards, and examples of plate and ironwork connected with London buildings or corporations.

The Quadriga on the Constitution Hill Arch.

DECIMUS BURTON'S arch on Constitution Hill, London, is soon to be completed by the erection of the bronze quadriga, the work of Captain Adrian Jones. This is of enormous dimensions, weighing forty tons. From the horses' hoofs to the tips of the wings of the figure of Peace, standing on a gun, it measures 32 ft. The original model for the quadriga was shown at the Royal Academy in 1891 under the title of "Triumph," about which time Captain Jones retired from the Army, where, in the veterinary service, he had exceptional opportunities for acquiring the knowledge of equine anatomy that is displayed in his models of horses. Captain Jones was a sculptor and painter and an exhibitor at the Academy before he left the Army, and the news of the winning of a prize offered by the Goldsmiths' Company for the best model of a "Huntsman and Hounds" reached him when he was in the camp at Korti, serving with the expedition that Lord Wolseley was then leading up the Nile. The colossal "Duncan's Horses," exhibited in 1892, was one of the largest models ever shown at Burlington House. Other large works by Captain Jones are the Exeter statue of Sir Redvers Buller, the equestrian statue of the Duke of Cambridge in Whitehall, the "Royal Marines" in St. James's Park, and the "Carabiniers" (6th Dragoon Guards) on the Chelsea Embankment.

The quadriga will not be the first piece of statuary to rest on the top of Burton's Arch, Wyatt's colossal statue of Wellington having once occupied that position. It is now at Aldershot.

The Tour S. Jacques and Its Scaffolding.

WONDER of wonders, the repairs to the Tour S. Jacques, so well known to every visitor to Paris, are now completed, and the scaffolding is being removed! At the time of the Exhibition in 1867, the famous Tour already possessed its scaffolding for repairs, and when visitors returned for the Exhibitions of 1878 and 1889 the scaffolding was still there. Their children came for the great Exhibition of 1900, and the Tour was literally hidden behind wood and lumber to a height of 200 ft. Then 1910 came and went,
but the famous scaffolding still remained. Now the wonde
ful day of deliverance has come at last. The scaffolding
being removed.

The tower originally formed part of the old parochi
church of the Boucherie, which dated back in part to t
twelfth century, and which was restored under successi
reigns and completed at last under François I. Fortunatel
the architect of Paris, M. Giraud, at the time of the sale
the church in 1837, had the proviso put in that the tow
should not be destroyed. The church was demolished;
market was established on the ground, and the tower w
used as a shot tower.

In 1836 the heirs of the revolutionary purchasers sold
their estate, and the city of Paris stepped in, luckily,
purchase the wonderful historical monument for £10,0
The market was pulled down; the ground was finally turn
into a garden, and the tower was to be used as the hea
quarters of a fire brigade. At last a wiser decision w
reached, viz., to leave the tower in all its quaint beauty, fu
restored, the top only used as a post for meteorological obs
vations. The labour of restoration was slow and tedio
but Paris now possesses another worthy attraction in t
fully restored old monument.

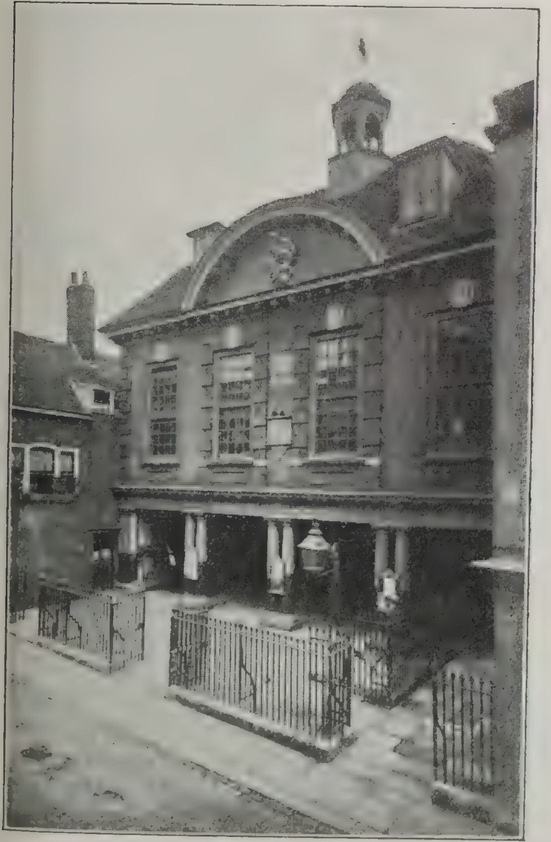
The Commonwealth Offices on the Strand Island Site.

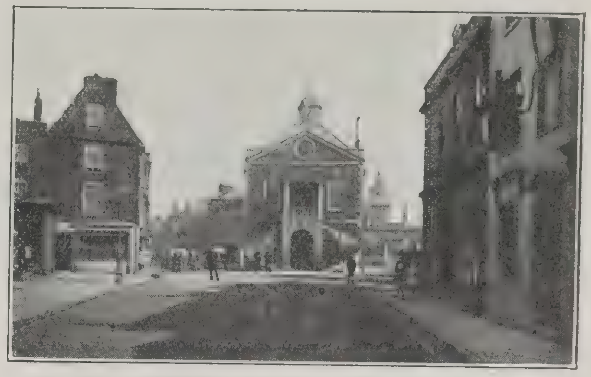
THE hitch in the negotiations with regard to the ab
now appears to have been removed, and there se
to be every probability that the proposed building
be erected on the site. It will be remembered that the Pr
Minister of Australia and his colleague the Minister
External Affairs, after making inquiries in London as to
most suitable location for offices for the accommodation
the Australian High Commissioner and the Agents-Gene
decided on the eastern end of the Strand "island" site. T
is roughly triangular in shape, with frontages to the Stra
Aldwych, and Melbourne Place, the last-named frontage be
already occupied by the London offices of the Agent-gen
for Victoria. The Ministers' choice was endorsed by a la
body of members of both the Federal and State Legislat
who were in London in connection with the Coronation,
who were of opinion that it would be an admirable site
an imposing building that would house not only the H
Commissioner but the Agents-General for the various A
tralian States, whose offices are now scattered over Lon
There was, however, one serious hindrance in the way of
project; this was the long-standing decision of the Lon
County Council to part with the land only on leasehold.
Council were willing to grant a lease for ninety-nine ye
but refused to part with the freehold. This difficulty has
been removed, and the Council will sell the land to
Australian Government if satisfactory terms can be arran
These terms are now the subject of negotiation between
Australian Government and the County Council Commi
Two proposals have been placed before the Government.
is to acquire the Strand frontage extending from the
torian Government offices to the eastern boundary or point
mediately opposite the Gladstone statue; the other inv
the purchase of the whole block, including the leasehold
on which the Victorian offices stand. The total area is 24
ft. super, and the purchase price proposed by the Counc
said to be approximately £350,000. If the whole are
purchased, the purpose of the Government is to erect a b
that will incorporate and be in architectural harmony
the Victorian offices, at a cost of something like £150,
Particulars of the offer have been forwarded to the Austra
Government, and according to an announcement made by
Governor-General at the opening of the Federal Parlia
recently, the matter is now being considered by the Gov
ment.

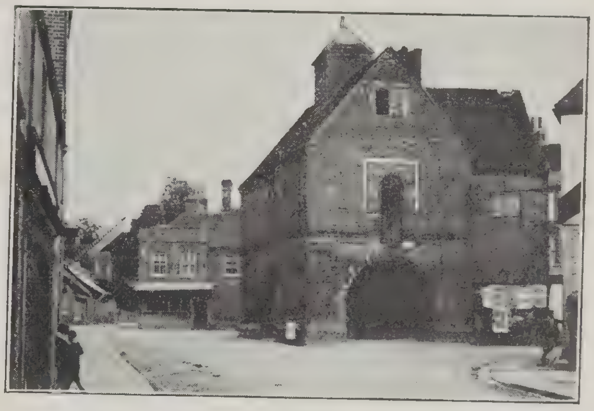
SOME OLD ENGLISH TOWN HALLS.

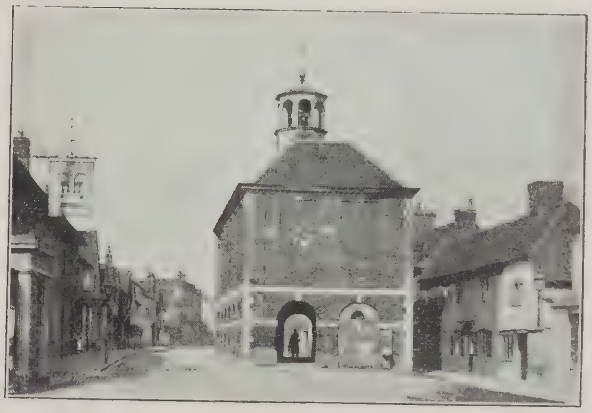
HE old town halls still existing in many small country
towns in England form a class of buildings which are
of considerable architectural as well as historic interest,
they serve to show how much architectural effect and
iracter may be exhibited in small and generally plain
uctures which have been designed to fill a practical
d in an unpretentious manner. Their architectural
ct arises in great measure from the fact that they
re generally designed with an open ground storey, the
lding above being carried on columns or arches. This is
arrangement which almost spontaneously ensures a certain
hitectural picturesqueness of effect. In the case of the
ll country town hall it arose naturally from the desire to
ke one building serve two purposes, with an economy both
site and of building materials. The town hall would
urally be placed in, or in the immediate neighbourhood of,
market square, the business centre of the town. For
y weather it was desirable to have some covered-in place
re people engaged in transacting bargains in buying and
ing could meet under shelter. This was most economic-
provided by an open ground storey to the town hall,
ve which could be placed the meeting rooms and offices
ired for municipal business. Hence arose the peculiar
of the English country-town town hall; simple in archi-
ral treatment, but not without a certain dignity on a
ll scale. Not infrequently it was crowned with a small
la, the base of which contained a clock, while the colon-
ed cupola might contain a bell, to be used sometimes as
mmons to the townsfolk on some special occasion, or it
it be merely an ornamental finish to the structure.

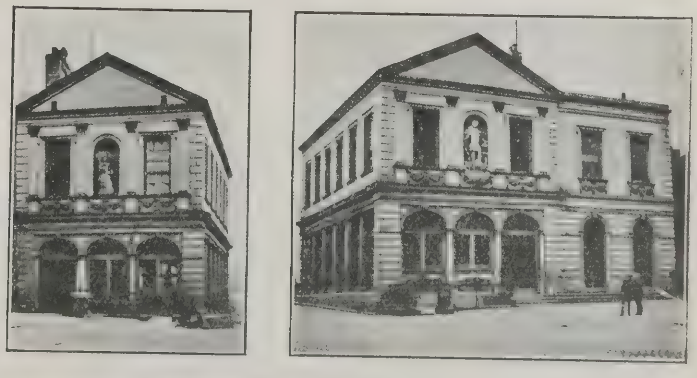
ne of the most characteristic of these town halls is that
Rochester, which has been attributed to Wren, though there is no documentary evidence of his connection with the building, and it is only included in Miss Milman's list of Wren's works as doubtful. It almost seems, however, to bear its own evidence on the face of it, in the coupled columns of the ground storey, and the broad treatment of the upper

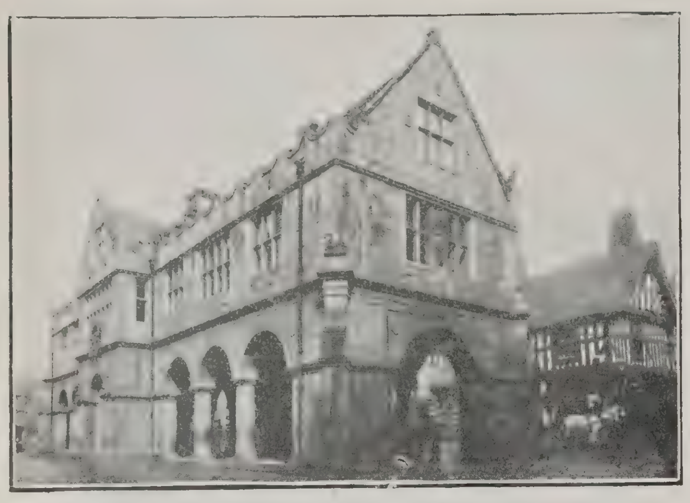

Guildhall, Rochester.


Town Hall, Poole.

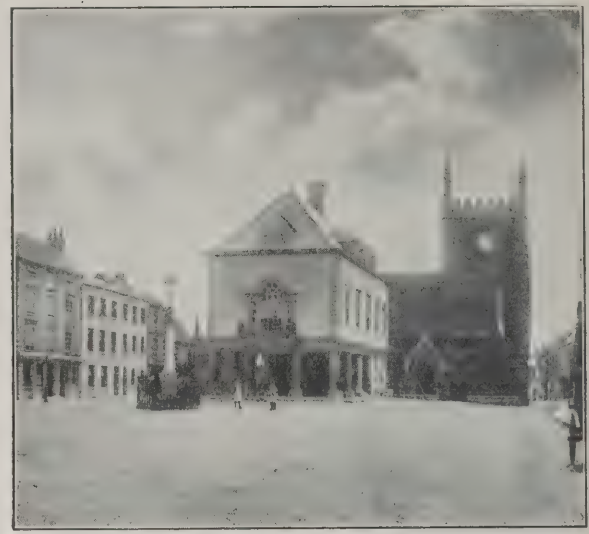

Town Hall, Watlington.


Town Hall, Amersham.


Town Hall, Windsor.



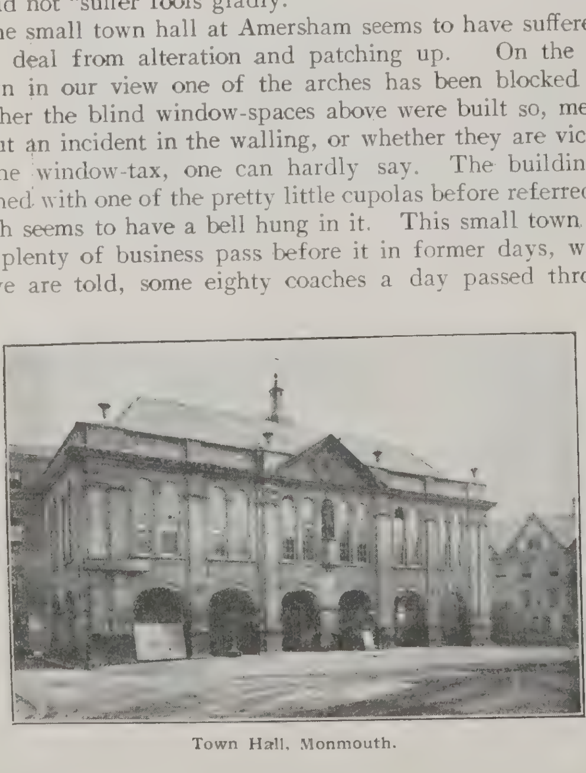
Shrewsbury Market Hall.



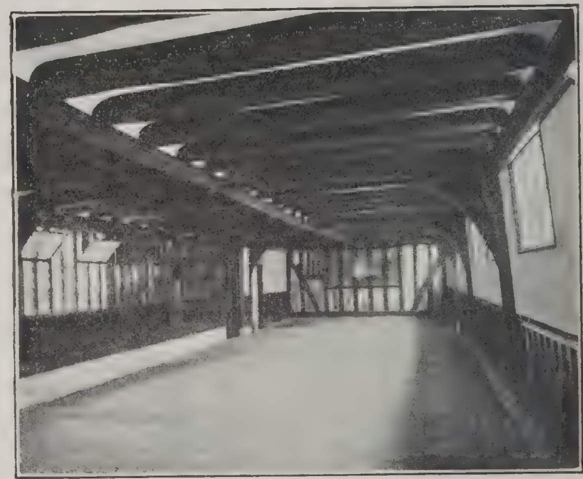
Town Hall and Market Place, Wallingford.

portion with its large carved pediment. It is at all events one of the most pleasing and satisfactory of those we have illustrated. It was built in 1687, and perhaps the probability of Wren being its author is rather increased by the fact that he undoubtedly designed the town hall at Windsor, built in the following year, as one commission of the kind might very naturally arise out of another. It must be confessed, however, that the undoubted Wren town hall at Windsor is by no means as satisfactory, architecturally, as the doubtful one at Rochester. The open ground storey is arcaded, and the arcade is too slight in proportion to harmonise well with the large pilaster order in the upper part of the building. About this building there is an anecdote told which is highly characteristic of Wren. The Mayor and Corporation, on inspection of the new building, chose to think that the upper floor had not sufficient support. Wren endeavoured to convince them that they were mistaken, but, finding them obdurate, he added two more columns to satisfy them, but took care to have these columns made a little too short, so that their capitals really supported nothing, though they looked all right from below. We are not told who discovered the trick; Wren was probably satisfied with enjoying the joke privately. The story is characteristic of Wren's determination not to be taught his business by those who did not understand it. He was in a general way one of the most amiable of men, but he did not "suffer fools gladly."

The small town hall at Amersham seems to have suffered a good deal from alteration and patching up. On the side shown in our view one of the arches has been blocked up; whether the blind window-spaces above were built so, merely to put an incident in the walling, or whether they are victims of the window-tax, one can hardly say. The building is finished with one of the pretty little cupolas before referred to, which seems to have a bell hung in it. This small town hall saw plenty of business pass before it in former days, when, as we are told, some eighty coaches a day passed through the now quiet little town, which the change of route broug about by the railways has left stranded. It is a town, ho ever, a good deal beloved by artists, and still containing good many picturesque little bits of building.



Town Hall, Monmouth.



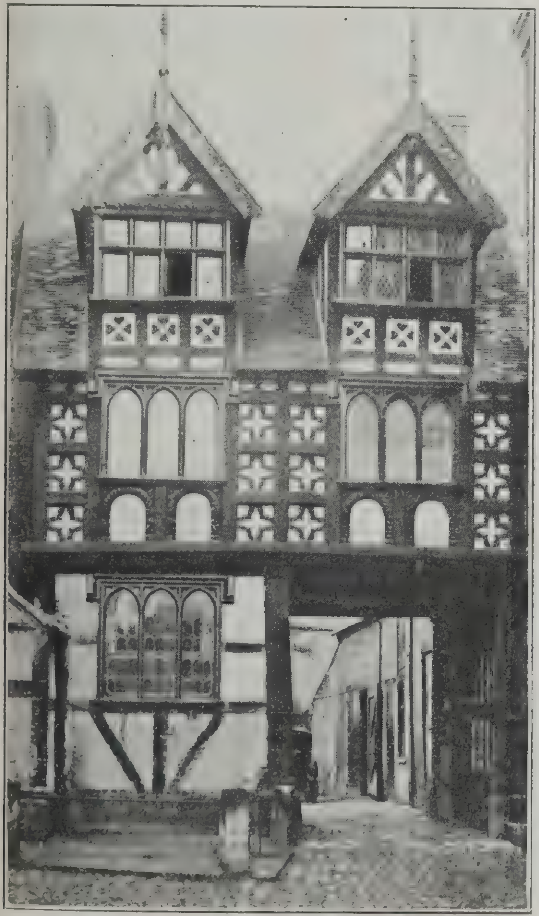
Council Room, Guildhall, Stratford-on-Avon.

Godalming old town hall is a still smaller erection, a parently octagonal, and the arches now blocked up were pr ably originally open. It has also its elegant little cupo with a clock below. A somewhat similar cupola with cl is to be seen over the town hall of Bridport, of which have not an illustration. Bridport town hall, with an tirely open ground storey, is quadrangular. It stands p turesquely at the angle with the road turning down to W Bay (once the port of Bridport), and faces down the w westward portion of Bridport Street, the road narrowi where it passes the town hall. "West Bay," as it is n called, contains some most picturesque old inns and ot houses, and an equally picturesque modern terrace built fr the design of Mr. E. S. Prior. Once, within the memory the older inhabitants, Bridport basin or dock, approached a narrow lane of water between two timber jetties, v always crowded with shipping carrying on the trade of town; now the railway has killed that too, and the basin empty but for an occasional coasting lighter with coal cattle-food, whose ingress and exit is an event. But old buildings are picturesque enough to be worth a visit.

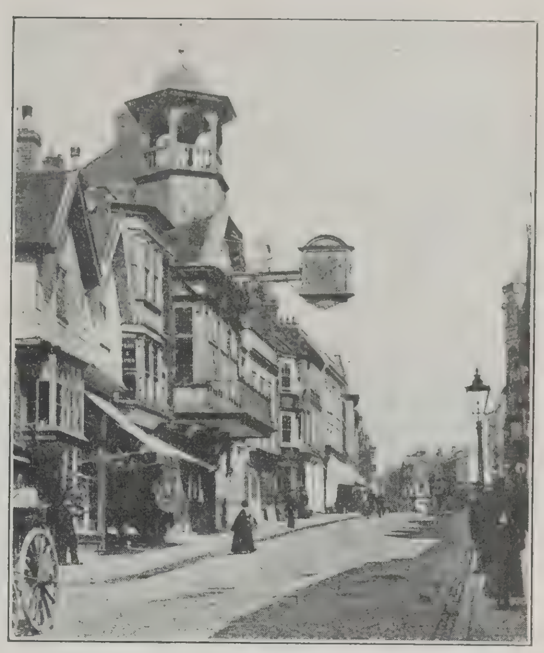
To return to our town halls; that of Wallingford, on Thames, is in better preservation than Amersham or God ming, and the superstructure stands not on arches but o sufficient phalanx of sturdy columns. Structurally this perhaps better than an arcade, as it enables the ground sto to be kept more open without the necessity of large piers the angles; and on the whole it is perhaps more pictures an the arcade. The town hall at Poole is of more archi-ctural pretension, having, as will be seen, an upper olumned portico standing on a rusticated archway below, nd flanked by a symmetrical curved exterior staircase on ach side. The exterior staircase is a feature that is always fective, whether in a palatial country mansion or a humble ountry town hall, and it is a pity we do not oftener see such n adjunct to a building now. But in these luxurious days eople expect to be so protected from the weather that they ould probably consider an exterior staircase a relic of bar-arism.

The little brick erection at Watlington, with a large arch n each face, is a very humble affair, not even relieved by e accustomed cupola, and its interest is certainly more his-ric than architectural. Shrewsbury, renowned for its amples of half-timber architecture, is contented with a alf-timber Council house, which looks much more like a ivate dwelling, whereas the other buildings we have been oticing, though on a small scale have a distinctly muni-pal character. It is difficult to look municipal in half-nber work; at all events it would require a very different chitectural treatment from this. In fact, the style of untry building prevalent in the eighteenth and latter part the seventeenth century was exactly the style for the aller type of municipal building, fitted to express a kind naive and unpretentious dignity. The interior of the tim-r-built Council room at Stratford-on-Avon, though very w, is however a good solid piece of work, and it illustrates at charming effect of the long low window, to which timber nstruction lends itself so well.

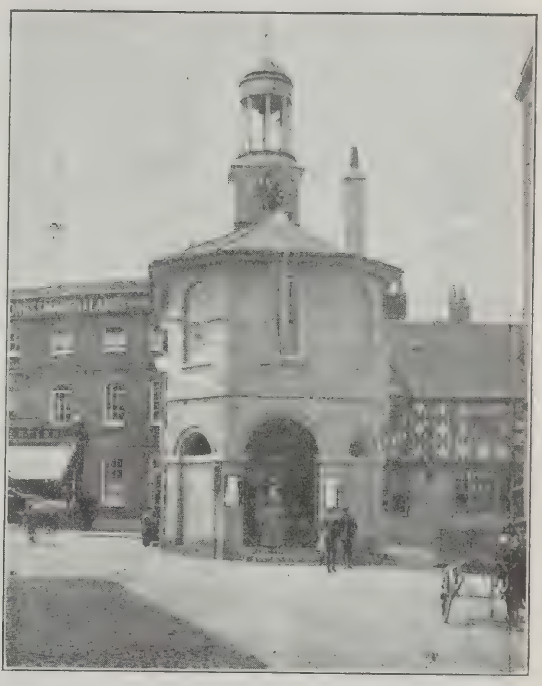
The street front of Guildford town hall, which is all that seen of it, has, like other picturesque bits in Guildford, a nsiderable reputation. The cupola is very elegant, and the ilding illustrates the method of projecting a clock-face out er the street, which says so much for the commonsense, in s respect at least, of our forefathers. They realised that public utility of a clock consisted in its being seen from long distance, and not merely when one came opposite the building, and took their measures accordingly. London was formerly full of clock-faces displayed in this practical manner; but it is to be feared the London County Council would make short work of them in the present day.



Counci House, Shrewsbury.



Town Hall, Guildford.



Town Hall, Godalming.

Monmouth town hall is a larger and more important structure than those hitherto mentioned, and, with all its plainness and primness of detail, is a very meritorious architectural composition, the large open arches in the ground storey contrasting very effectively with the smaller coupled windows above. It wants a more important and more visible cupola or lantern to break the line of the roof.

Where a modern town hall is required for a small country town, the architect could hardly do better than study some of these old town halls as the basis at least of his treatment. He would introduce, no doubt (and rightly), "some modern touches here and there," but the could hardly produce anything more suitable in general expression. That some architects are of the same opinion we have been able to notice from the designs of some country town halls occasionally exhibited at the Royal Academy.

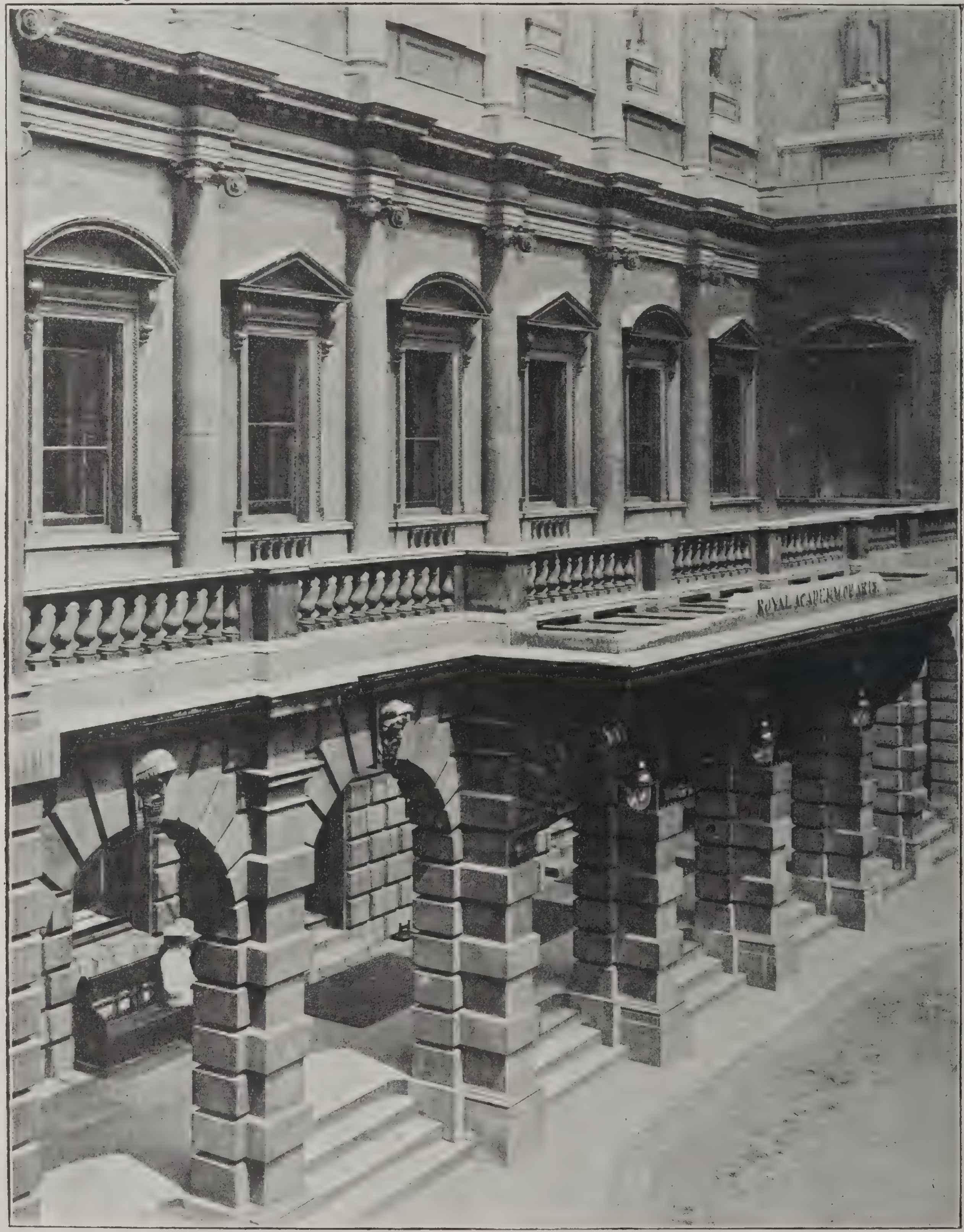
THE FACADE OF BURLINGTON HOUSE.

A COMPARISON WITH PALLADIO.

The accompanying illustrations of the courtyard façade of Burlington House and the Palazzo Porto, Vicenza, are interesting as affording a very marked example of the influence (to put it mildly) of one building on another: to which it would be easy to add a modern commentary. But let the photographs suffice.

The third Earl of Burlington, who succeeded to the title and estates in 1704, is said to have spent several years in Italy, where he became an enthusiastic admirer of the genius of Palladio. He commenced the transformation of Burlington House on his return in 1716, Colin Campbell being his architect. Colin Campbell had never been in Italy, and was therefore unacquainted with Palladio's work. Lord Burlington must have instructed him to copy the design of the Palazzo Porto published in the "Quattro Libri Dell'Architettura" by Palladio (Venice, 1570), unless he happened to possess the original drawing. Virtually, therefore, the wings only were from Colin Campbell's own design. With the completion of the south fro and its new roof, Colin Campbell's se vices probably terminated.

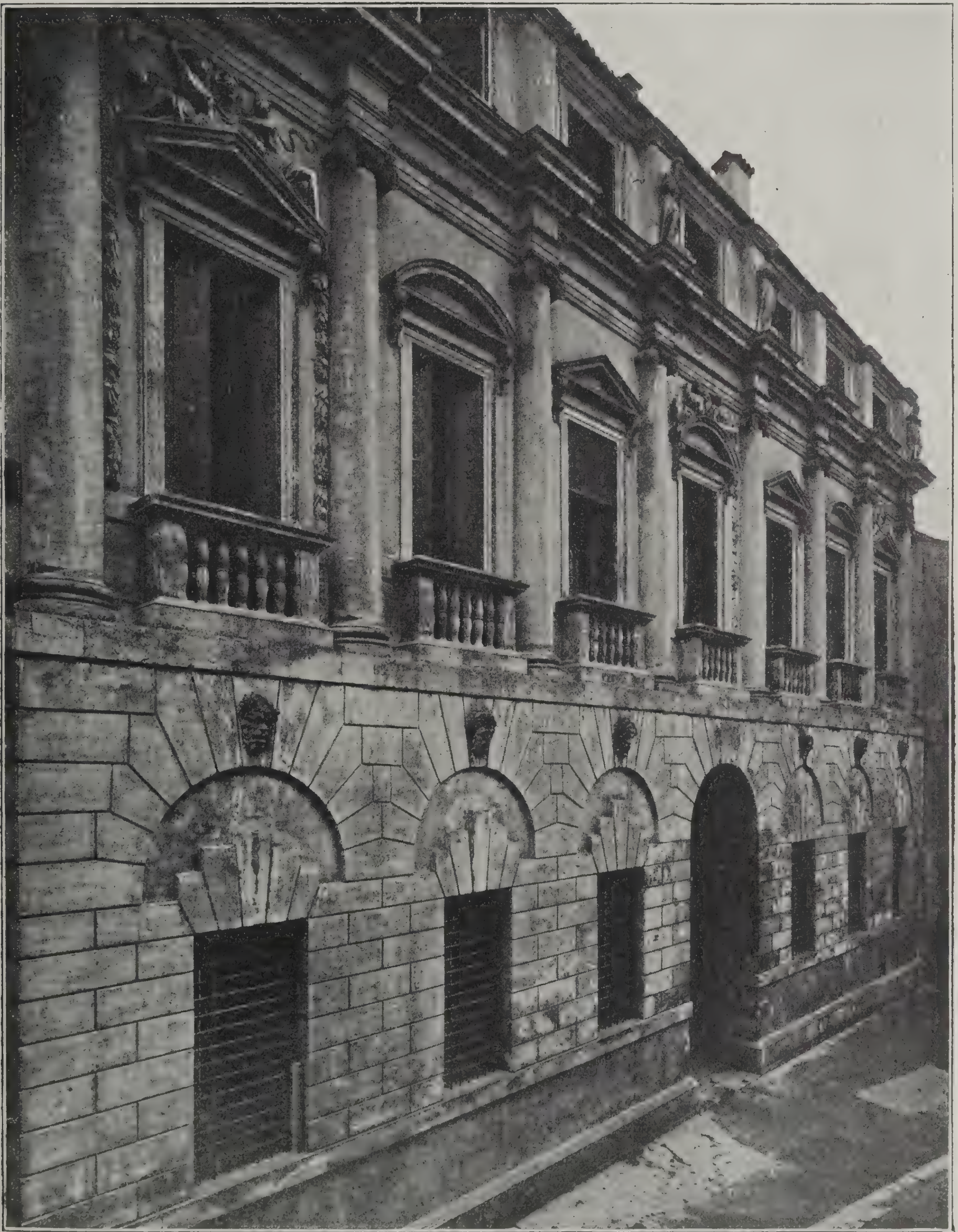
Although the resemblance of Campbel courtyard to this work of Palladio is obvious that none could doubt his sour of inspiration, there are certain modific tions which at least imply a rather honou able desire to avoid an absolute rep duction of the original. The grou storey is of less height, so that no spa was allowed for the circular arches ov the windows, as in the Palazzo Por There is the same number of thre quarter detached Ionic columns on t



DETAIL OF THE FACADE OF BURLINGTON HOUSE.

st floor, and similar windows with pedi-
nts, alternately angular and segmental,
t without the figure sculpture on the
. Modillions have been introduced
o the cornice, and a balustrade takes
place of the attic storey of the Palazzo
rto. In the design of the new buildings
Burlington House connected with the
rk for the learned societies, Messrs.
nks and Barry were even more pro-
unced in their veneration of Palladio's
rk, having carefully introduced the attic storey and the projecting balustrades in front of the first-floor windows. They somewhat marred the beauty of the Ionic columns, however, by the addition of wreaths hanging from the volutes. With regard to the courtyard façade by Colin Campbell, it has frequently been stated that the Palazzo Chieregati was the building upon which its design was based. To this building, however, the work bears very slight resemblance.

In this connection it is very interesting to note that Inigo Jones's Banqueting Hall in Whitehall is, in its main features, strongly reminiscent of Palladio's Palazzo Porto. The general conception is of course different, and would doubtless be considered by some as distinctly superior to the work of the great Italian master. The central motif of the lower storey of the Banqueting Hall, however, with its three-quarter Ionic columns, its alternated pediments to the windows, and its small balustraded balconies, might reasonably have been reproduced direct from the Palazzo Porto façade.



DETAIL OF THE PALAZZO PORTO, VICENZA, BY PALLADIO.

THE MERITS OF HEATING BY GAS.

The claims of gas as an effective and economical distributor of heat are now receiving more serious attention than formerly. The question of heating our buildings, domestic and otherwise, is one that has engaged the active attention of architects for many years, and particularly in London, where the damaging effects of the "smoke nuisance" are so manifest. This activity has of late largely been directed towards the question from a more scientific aspect than hitherto, i.e., not merely from the point of view of obtaining heat, and that only, but of obtaining it in its most convenient and hygienic form.

Of late years, in this country especially—where climatic vagaries have marked all seasons of the year—the coal fire has fallen out of favour for the simple reason that it is not possible to adapt that means of heating to the varying temperatures to which we are subjected, and, as a consequence, a system of heating that is always instantly at the will of the user is becoming more widely known and adopted day by day.

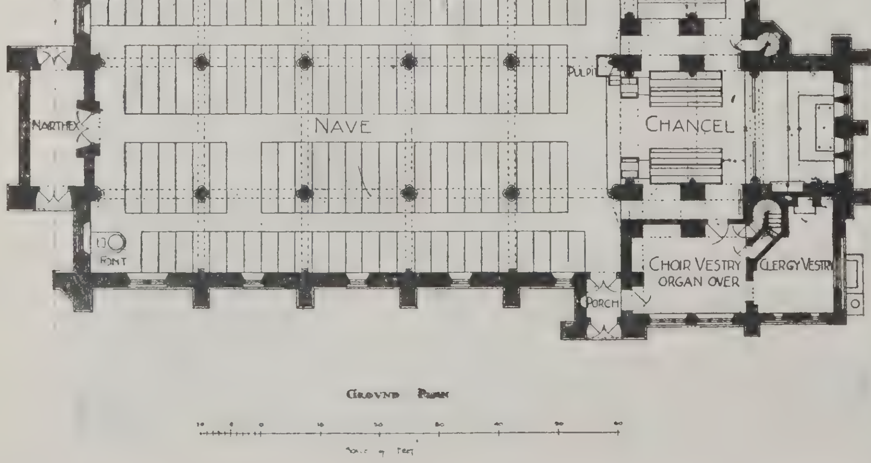
The enterprise of the manufacturers of gas-heating stoves and the gas supply companies in perfecting the stoves from a hygienic as well as from a practical point of view has led to this means of heating finding favour largely with those who are in a position to appreciate the advantages to be gained thereby.

The work that the Gas Light and Coke Company have undertaken in offering to architects the free fixing of gas fires for a trial period should induce members of the profession who have not had personal experience of modern gas heating to take this opportunity of studying the subject more closely, and should lead to their advising the still wider adoption of this excellent system of heating.

OUR PLATE.

St. Ninian's Church, Douglas.

This church has been erected under the Noble Bequest on a site dominating the town, local materials being almost exclusively used. The architect was Mr. W. D. Caröe, F.S.A., F.R.I.B.A., and the builders were Messrs. Costain and Son, of Blundellsands, Liverpool.



ST. NINIAN'S CHURCH, DOUGLAS. W. D. CAROË, F.S.A., F.R.I.B.A., ARCHITECT.

"RECENT ENGLISH DOMESTIC ARCHITECTURE, 1911."

The special issues dealing with domestic architecture published by the *Architectural Review* in 1908, 1909, and 1910, having been received with so much favour, the proprietors have decided to publish another issue this year. The volume is now in course of preparation, under the direction of Mr. Mervyn E. Macartney, B.A., F.S.A., F.R.I.B.A., who will be pleased to consider photographs of any recent work suitable for inclusion in the volume. He will also be glad to hear of any new houses of particular interest with which the reader may perhaps be familiar. All communications should be addressed to the Editor of the *Architectural Review*, Caxton House, Westminster, S.W.

ENQUIRIES ANSWERED.

The Planning of Motor Pits.

W. P. H. writes: "I should be glad to know the correct way to plan a modern motor pit—whether longitudinally with the car, or crosswise. All the pits I have seen are lengthwise, but I am told that, in practice, it is found more convenient for the cars to stand crosswise over the pit, and to be moved backwards or forwards as the circumstances require."

—We are certainly of the opinion that the most satisfactory form of motor-pit is one which runs longitudinally with the car; indeed we fail to see that any unusual advantages can be urged in favour of one that runs in a transverse direction. Its disadvantages, however, are obvious. Motor pits are seldom more than three feet in width, and one placed transversely would consequently necessitate moving the car whenever access was desired to a distant part of the mechanism. With the big modern touring cars, which almost invariably have a long chassis, this would be a particularly irksome business for the mechanic. It would not, of course, be necessary for a transverse pit to be nearly so long as the other kind, as length would mean mere waste of valuable space. This economy in the size of the motor pit is, so far as we can see, the only advantage that can be claimed for the transverse type; but it is doubtful whether this entirely compensates for the increased difficulty of dealing with the car. We would refer our correspondent to our issue for November 30th, 1910, which conta illustrations of a good example of a m pit designed by Mr. C. Harrison To end, F.R.I.B.A.

Party Wall Rights.

T. writes: "Can you inform me is the usual method of dealing with p walls in the provinces? (in London course, they come under the London B ing Act). Is the builder required to notice to the adjoining owner when intended to carry out underpining, rai etc.? If the wall requires rebuilding, the adjoining owner he called upo pay half the cost? If the building o carries his new building higher than old one, and makes use of the adjoi owner's wall, can he be called upon to the adjoining owner a moiety upon wall he has not hitherto used?"

—There is no Act for the country a corresponding to the London Buil Act, and I should advise that you sh either yourself, or by your surveyor, ex to your neighbour what you wish to and obtain his written consent to it the party wall requires rebuilding it w be fair for each party to pay one-half. if it only becomes necessary to rebui because of the operations of one p only, then that party should pay for i Neither building owner has a right t crease his easement without the conse the other. The whole matter is essentl a question for arrangement between two owners. F. S.

LECTURESHIP IN TOWN PLANNING BIRMINGHAM UNIVERSITY.

A lectureship in Civic Design and T Planning has been established in the versity of Birmingham. The cost wil defrayed by the Bournville Village T which was founded by George Cadbu encourage schemes of betterment and proved housing generally. Mr. Rayn Unwin, F.R.I.B.A., author of "T Planning in Practice," who is well kn for his work in connection with L worth and the Hampstead Garden Sub has accepted the lectureship for the year, and will begin his course during present session. The lectureship wi first be associated with the Depart of Civil Engineering, in which stu are training for civic and municipal vice of various kinds; but it is hoped students in other faculties, especially working for diplomas in social stud well as persons interested in archite and in civic improvement generally, take advantage of the lectures. An lecture will be given on October 6th

OBITUARY.

The death occurred at Southport September 15th, of Mr. R. H. Crab who was a representative of the Stone Firms, Ltd. He was former quarry manager at Portland, Dorset, was well known in professional circl the North and South of England.

An Early English Tiled Floor.

While excavating in Little E Church, Essex, near the tomb of Isa of York, aunt of Edward IV., who in 1483, workmen have disclosed a g and figured tile floor, showing that at period after that date and before the floor of the church had been rais its present level. The tiles are E English and in excellent preservatio

IEW BUILDINGS AT MESSINA AND REGGIO, CALABRIA.

The appalling disaster from earthquake ad fire that fell upon Messina and eggio, Calabria, at the latter end of 08, has brought home to the minds of e engineers and architects responsible r the works of reconstruction the urgent ed of adopting some system less liable destruction under seismic disturbances an those previously in use. The advanges of reinforced concrete construction resisting the effects of the earthquake elf and the consequent fire were fully monstrated at the time of the San ancisco disaster in 1906, and, as a sult of the experience then gained, reforced concrete construction has been ry generally employed by architects and gineers in the work of reconstruction, t only at San Francisco, California, t also at Valparaiso, Chili, and in maica, West Indies. And now similar nstruction has been, and is being, opted for the new buildings at Messina d Reggio, in preference to the former stems of what may be called "loose" nstruction, such as bricks, stone blocks, any other type that does not offer continuous monolithic resistance to the th tremors.

Immediately after the disaster at Mesa and Reggio the Italian State Railway (ervizio Centrale del Mantenimento, Ferie dello Stato in Bologna) ran up temary sheds to house their officials and n, and these have been recently supersed by buildings of a permanent charer. Having regard to the forces of ure that such buildings would have resist, the engineers of the Construc- Department of the Company have opted the excellent type shown in the accompanying photograph and working drawings, in which the houses are built of timber framework with Expanded Metal lathing (supplied by the Expanded Metal Co., Ltd., of London) and cement plaster, a combination of elasticity and rigidity that affords the best possible resistance to earthquake, fire, and tempest. In all there are seven hundred houses, and they form the most extensive and important range of new buildings at present undertaken in the Messina and Reggio districts.

From the accompanying illustrations it will be seen that the general arrangement is quite modern; each house, detached and surrounded by a garden, consists of 4 or 6 rooms. Special attention was paid to lighting, ventilating, and sanitary arrangements, with the result that the houses are comfortable and hygienic. The system adopted is so good and economical that the following details of construction may be of use to those who are interested in the subject:

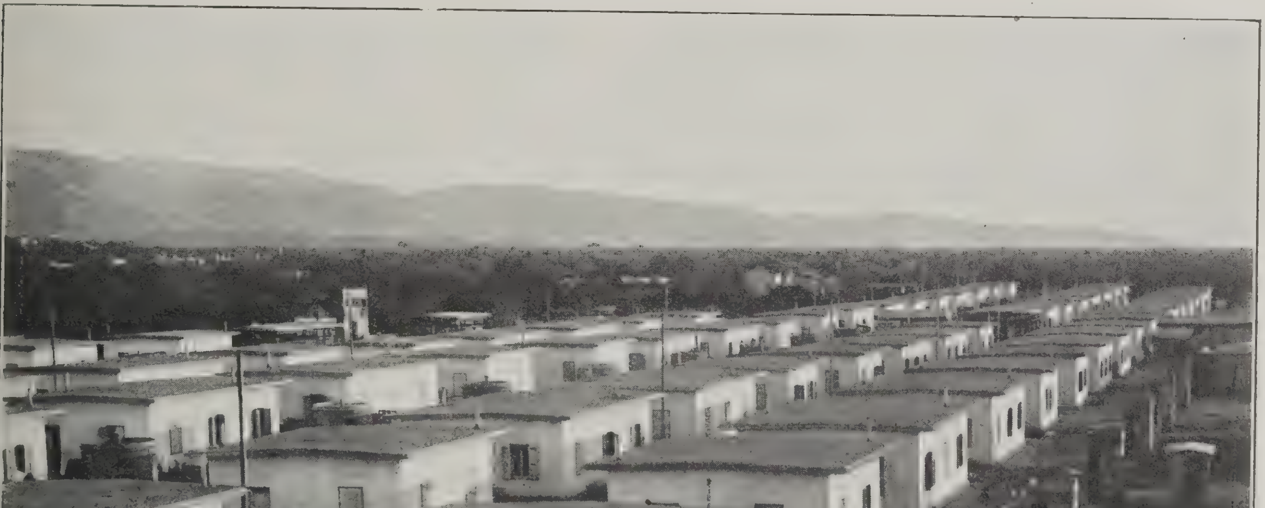
The timber frame-work, which is all strongly connected, is of pitch pine coated with a preservative and antiseptic solution. Expanded Metal lathing is fixed on each side of the framework of the main walls, thus providing a contained air-space of about 6 in. The external lathing is covered with Portland cement plaster, finished with hydraulic lime plaster, to a total thickness of $1\frac{1}{4}$ in. The internal lathing is also covered with Portland cement plaster, but is finished with ordinary lime plaster, to a total thickness of 1 in. The hollow partition walls are similar to the main walls, except that a lighter lathing was used, the plaster being 1 in. thick on each face and finished as on the inside of the main walls.

The houses are floored with square, coloured cement tiles made under hydraulic pressure. The roofing material is Holz cement (a damp-course sheeting), and all fittings are in pitch pine.

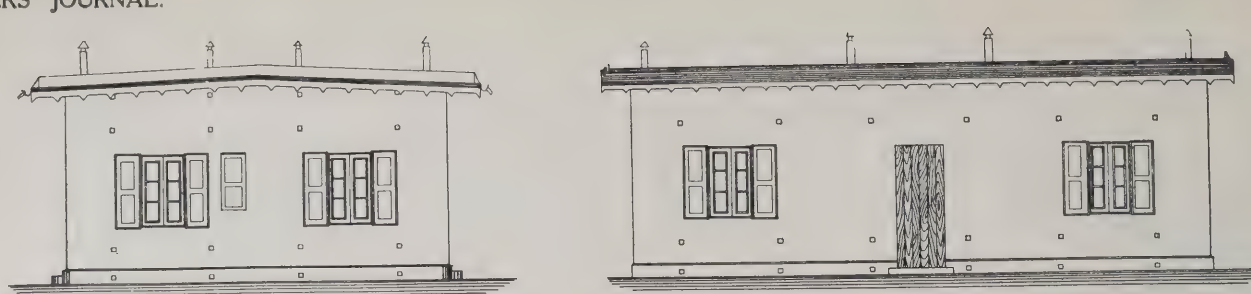
New Building Regulations.

The rules prepared for the rebuilding of Messina resemble those drawn up by the Bourbons after the earthquake of 1783, and mostly differ only so far as is required by the introduction of new materials, constructional steel, and reinforced concrete. These latter rules were excellent, and many survivors of the last disaster owe their lives to the fact that their houses were built in accordance with them, with the consequence that though shattered they withstood the shocks, while almost all the more modern buildings were crushed.

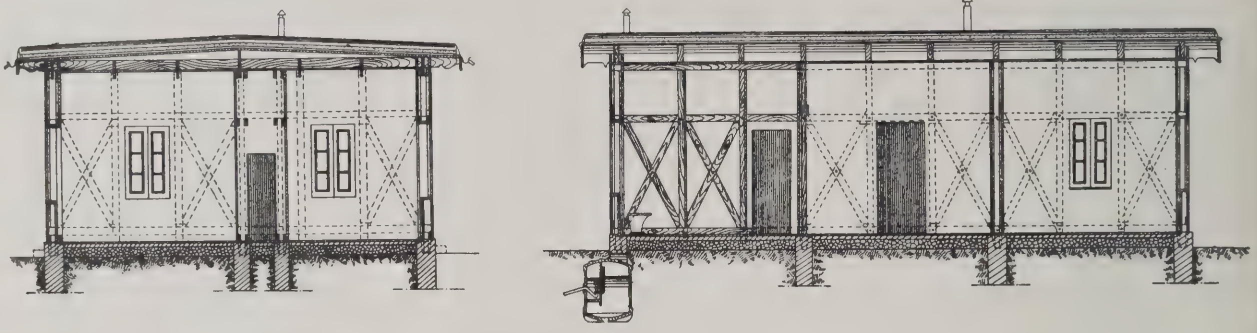
The new regulations are the result of careful investigations by a commission of engineers and men of science, and are drawn up with three objects in view—(a) the prevention of rebuilding altogether on ground where, owing to its nature, it would be absolutely unsafe to erect buildings or structures of any description; (b) the fixing of regulations to secure safety of buildings in all circumstances; and (c) the fixing of a minimum width for streets and of minimum distances between buildings, so as to secure in all cases a safe escape to the open. For the streets in larger towns a minimum width of 10 m. has been fixed, and 8 m. for minor towns, or where there is not much space available. This minimum may be reduced to 6 m. where the streets have houses on one side only. In no case may the height of the houses exceed the width of the street, and as a rule buildings may not exceed 10 m. in height, from the ground to the eaves, exceptions being made for churches and public buildings, in which cases the limit is raised to 16 m. The



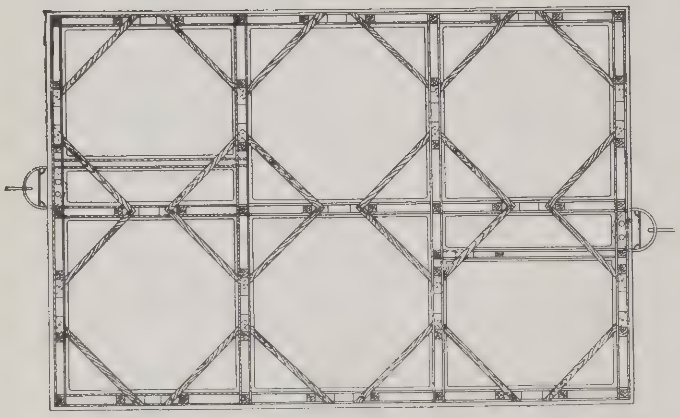
THE NEW FIRE- AND EARTHQUAKE-PROOF BUILDINGS AT MESSINA.



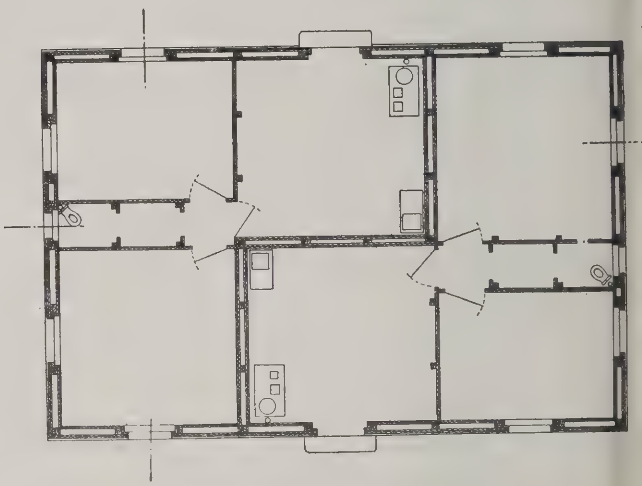
Elevations

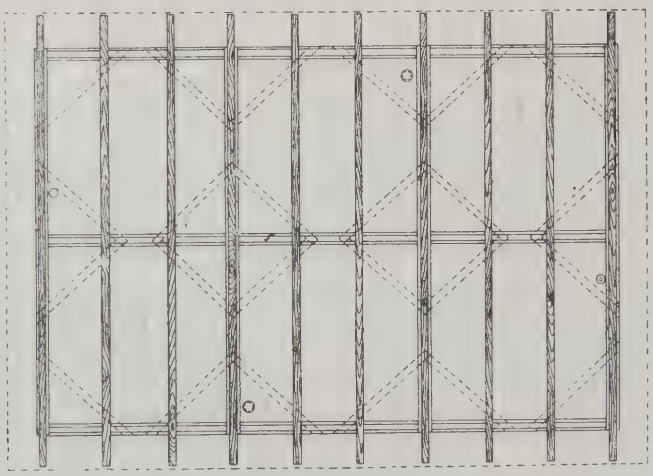


Sections



Foundation Plan





Roof Plan

FIRE- AND EARTHQUAKE-PROOF BUILDING AT MESSINA.

employment of cast iron for pillars and general structural work is forbidden. Practically all systems of construction, viz., wood, masonry (cut stones or bricks), reinforced concrete, etc.—are permitted provided that all materials are of an approved quality, and that all buildings have a frame of timber, iron, or reinforced concrete.

As a consequence of the new rules, Messina will occupy a much greater area than formerly. The new plan of the city, which includes a magnificent new road along the quays over 300 ft. wide, and many other interesting features, provides for considerable extension, especially along the sea front. Harbour improvements at an expenditure of about half a million sterling are also contemplated.

FIRE PREVENTION NOT

Fires in Glasgow.

During the present m
two extensive fires h
broken out in Glasg
The first occurred on
evening of September 4th, at the prem
of the Scottish Wholesale Society, in H
rison Street, South Side, when severa
the upper flats of a large portion of
building were destroyed. Damage to
extent of between £120,000 and £13
is said to have been caused. It is st
in the "Scotsman" that, modified in s
of its details, the front elevation is
design that was placed second in the
petition for Glasgow City Chambers.

The origin of the fire does not ap
to have been ascertained. Despite
prompt arrival of the fire brigade the
gained rapidly, and was, indeed,
dered far more serious by spreading
the ironmongery department, wher
originated, to the storey above, w
contained bedding goods and other
flammable material. The top or
storey, in which quantities of furn
and household articles were stored,
shortly afterwards involved. Certain
cautions against fire appear to have
taken. A fireproof wall extended
the main front, in Morrison Stree

e rear of the building, and this very ffectively restricted the fire to only one ection of the building, the western half, ontaining valuable goods, remaining unamaged. But for this wall, it seems cerain that the whole building would have een involved. This evidence is a urther demonstration of the splendid serice rendered by fire-resisting construction. he central tower, also, was safeguarded rom fire by double iron doors on each de of the inner staircase. No adequate cheme of fire-preventive measures, howver, appears to have existed. The dome n the corner tower of the building, which as supported by steel girders, was also estroyed by the flames, and the tower self was almost completely gutted. The ctual damage to the buildings is estimated at £40,000, the remainder of the um first mentioned being accounted for y stock.

The second outbreak occurred at a lock of buildings on the north side of e Trongate, a congested district conaining a number of historic buildings, cluding the remains of the old Tontine, hich were destroyed. The Tontine was e former Exchange of Glasgow, having een erected in 1782. The Tolbooth and own Hall, which was also involved, ccupied the site originally devoted to n earlier building which appears to have ombined the functions of both courtouse and prison, in addition to that of Town Hall. These historic buildings ere practically destroyed, and several arge warehouses were gutted, the damage eing estimated at about £50,000.

The Fire at Ward, Lock's.

The recent fire at the premises of Messrs. Ward, Lock and Co., in Salisbury Square, .C., has been the subject of an enquiry t the City Coroner's Court. Mr. Leslie ock, director and secretary to the company, stated in his evidence that the fire, his opinion, was due to carelessness on he part of employees. The outbreak ccurred on the topmost floor in a room at was used as a warehouse for bound ooks. These were stored in wooden acks, which went right up to the ceiling. he room was lighted with gas, and had re-resisting doors at the western end. vidence was also given by a warehousean, who said that only one gas burner as alight at the time of the outbreak. hemical extinguishers were used, but ey appeared to have little effect upon e flames.

The Coroner, in summing up, said that ere was no evidence of carelessness. was for the jury to decide whether the eans of exit were sufficient. Personly he thought the two lifts were not as ey should be, and but for the expedion of the firemen the fire might have en much more serious.

The jury found that there was no evience to show the cause of the fire. They nsidered the means of exit reasonably fficient, but were of opinion that the ts should be enclosed in some fireisting material; also that more effective eans of escape should be provided on e premises.

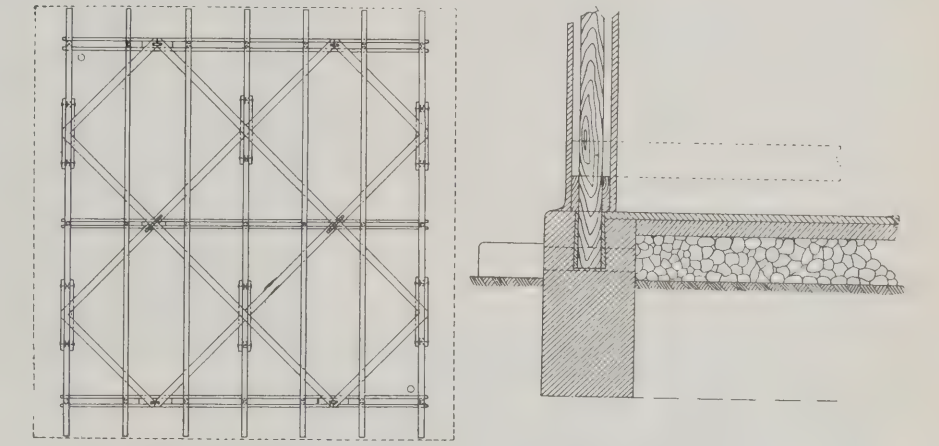
Wood Casing nd the L.C.C.

The recent succession of big fires in London, nearly all of which were attributed by the daily ress to badly insulated electric wires, ve prompted the Building Committee the L.C.C. to consider the advisability of compelling all hotels and lodging-houses at present wired in wood casing to be rewired in steel tubing. There appears to be small justification for the legal enforcement of such a drastic alteration. The reports of fires which appear in the daily Press are rarely prepared by men possessing a sound technical knowledge of electricity, and these hastily-written accounts, attributing fires to causes which have been suggested, perhaps merely by idle rumour, should not be seriously considered when it is proposed to enact new legislation.

As a matter of fact, wood casing is by no means so defective as it appears to be generally considered. Indeed, our contemporary "The Electrical Review" says that there are numerous buildings of every size and description which were wired twenty or more years ago in wood casing, and in which the installation is to-day in irreproachable condition. On the other hand, it is asserted that any contractor or consulting engineer can point to cases where steel tubing has failed. This, of course, conveys no condemnation of the conduit system. It is primarily a matter of good or bad workmanship. The latest edition of the wiring rules of the Institution of Electrical Engineers expressly sanction the use of wood casing, and the practice is accepted by some fifty insurance companies and by innumerable electricity supply authorities. Before making any extensive revision of existing legislation, therefore, the L.C.C. should consider the reasonings of the technical authorities, whose best experience and knowledge is embodied in the present wiring rules.

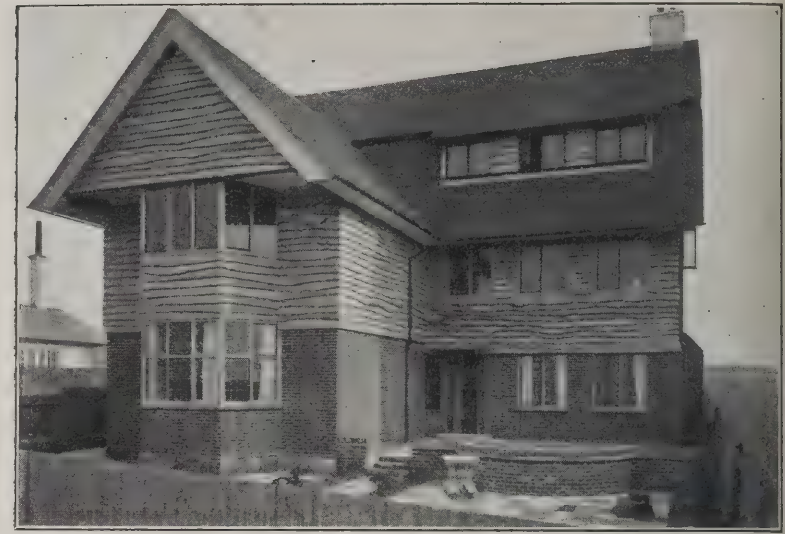
LECTURES ON LIGHTING.

A special course of twelve lectures on the subject of Illuminating Engineering has been arranged, under the supervision of Mr. Leon Gaster, for delivery at the Regent Street Polytechnic. The course will run from October 31st, 1911, to February 15th, 1912. The syllabus is as follows: I. and II., "Electric Lighting" (by Prof. J. T. Morris, M.I.E.E.); III. and IV., "Gas Lighting" (by J. G. Clarke); V., "Oil, Petrol-air Gas, Acetylene, etc." (by E. Scott Snell); VI., "Illumination and the Eye" (by Dr. W. J. Ettles, F.R.C.S.E.); VII., "The Measurement of Light"; VIII. "Illumination and its Measurement"; IX., "Shades and Reflectors"; X., "Daylight and Artificial Lighting Compared"; XI., "Colour of Artificial Illuminants"; XII., "Practical Lighting Problems"; (the last six lectures will be delivered by J. S. Dow, B.Sc., A.C.G.I.). Further information may be obtained on application to Mr. Robert Mitchell, Director of Education, at the Polytechnic.

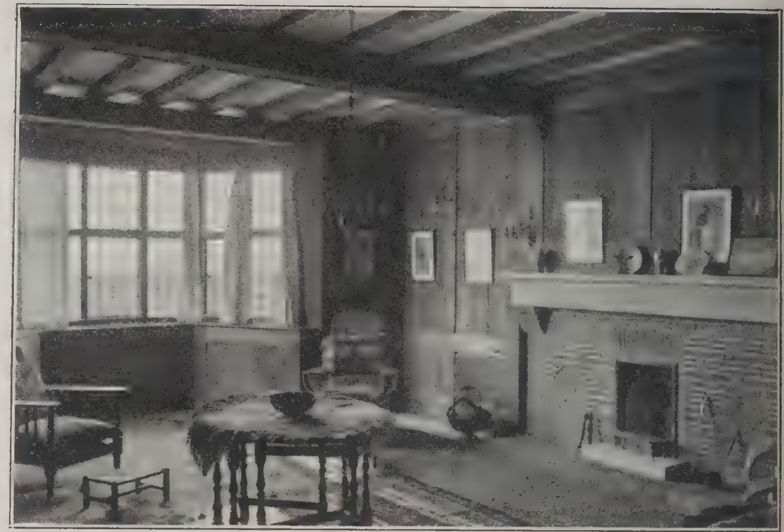


FIRE- AND EARTHQUAKE-PROOF BUILDING AT MESSINA: CONSTRUCTIONAL DETAILS.

THE SEASIDE HOUSE.



Entrance Front.



Sitting Room.

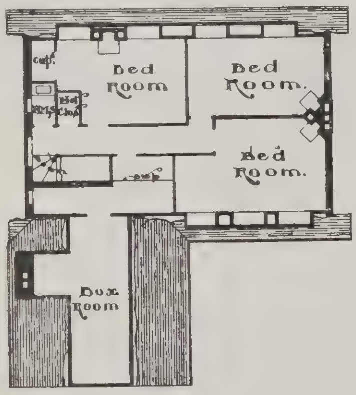
The rush of present-day business life, which is largely responsible for the week-end habit, has created a demand for a second house to which the busy professional or business man may retire for rest and recreation. This demand has been largely met by the country speculating builder; but the public are beginning to find that the ordinary country builder's ideas seldom rise above the rows of villa residences he has been accustomed to erect. Contrasted with these are houses similar to those shown in the accompanying illustrations, the designs of which have emanated from architects who have made a study of the special type of house in question.

The main requirements of these houses are: (1) Small outlay in keeping; (2) economy of space in planning; (3) minimum of household labour. Mr. F. E. Williams, in the houses here described, has been successful in fulfilling these conditions.

The house at Kingsgate, situated on the cliff between Margate and North Foreland, is built with cavity walls, the lower storey being faced in the front with rough texture 2 in. bricks, the side and back walls with 3 in. rough stocks colour-washed. The upper storey has elm boarding secured to the brickwork in fillets, the edge of the boards being the outside face of the tree. The long, straight, and even lines of the weatherboard usually seen is thus avoided, and an artistic effect obtained.

The arrangement of the ground floor, as will be readily seen from the plan, is quite simple. A small compact hall leads from a vestibule, from which the main living or sitting-room and dining-room are entered. A good-sized cloak-roon with hot and cold water services, is ne the staircase, with a lavatory leadin therefrom, the kitchen department bein placed at the rear of the building wit a separate entrance at the side for trade people, and for access to the garde behind. On the two floors over there a six bedrooms and a small cabin-room with large open space in the roof of th gable for boxes, etc.

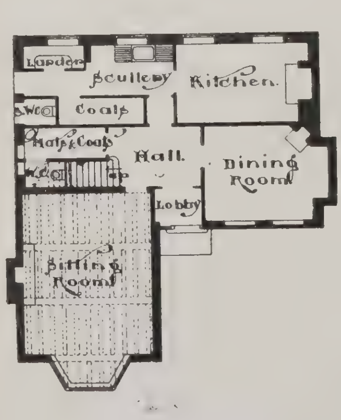
The main sitting or living room is ft. 6 in. by 16 ft. wide, with a larg roomy bay window 4 ft. 6 in. deep beyon This room is treated with beam ceilin of square timber baulks as they are im ported, and merely scrubbed with soa and water to remove the dirt; asbesto slabs are let into rebates in the beam and merely whitened, forming the ceiling The floor boards are nailed direct to th topside of the beams, the space betwee the floor boards and the asbestos sla ceiling being pugged. The walls of th room are panelled out with the outsid boards of the baulk timbers which ar usually cut off at the saw-mills and dis carded. These boards are left quite plain and when fixed are scrubbed down, leav ing the appearance of the room a charm ing grey colour, very restful, and a exceedingly fine background for Japanes or coloured prints.



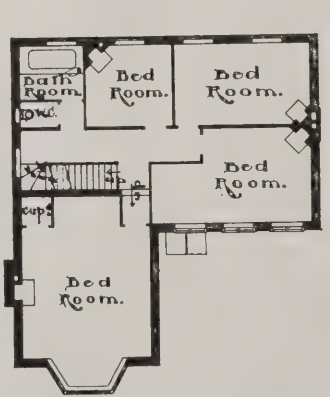
Attic Plan.

Kingsgate, near Margate.

Scale of Feet

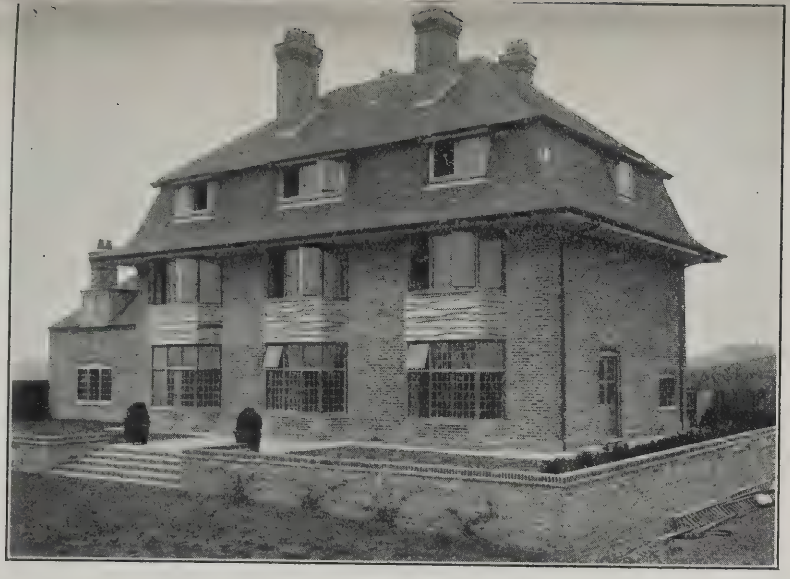


Ground Plan

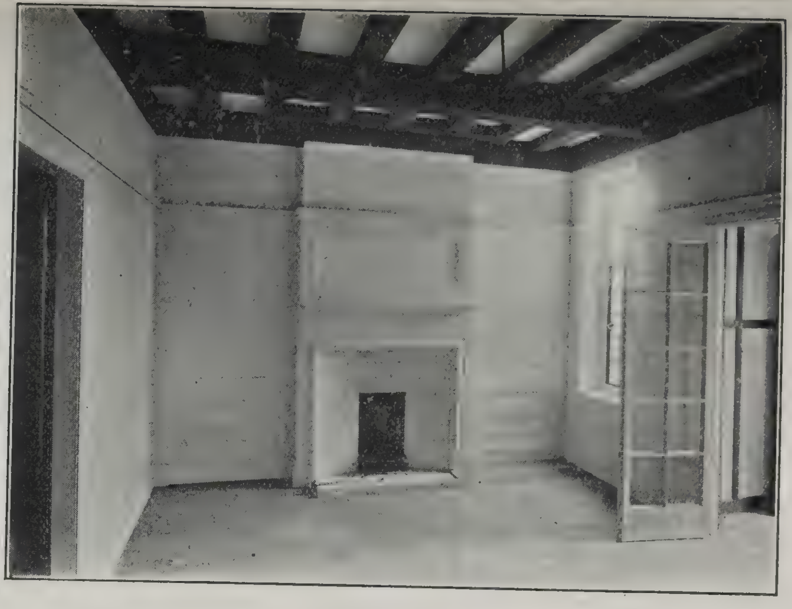


First Floor Plan.

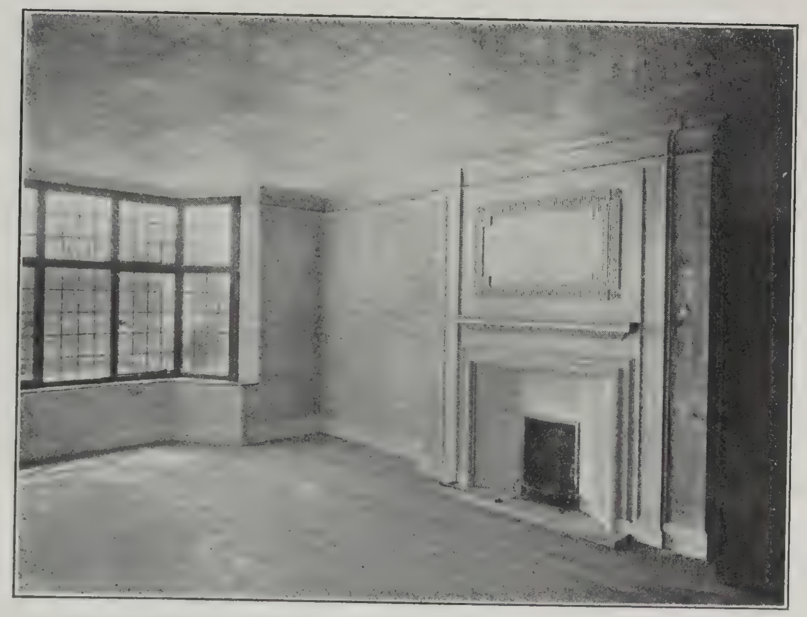
F. E. WILLIAMS, A.R.I.B.A., ARCHITECT.



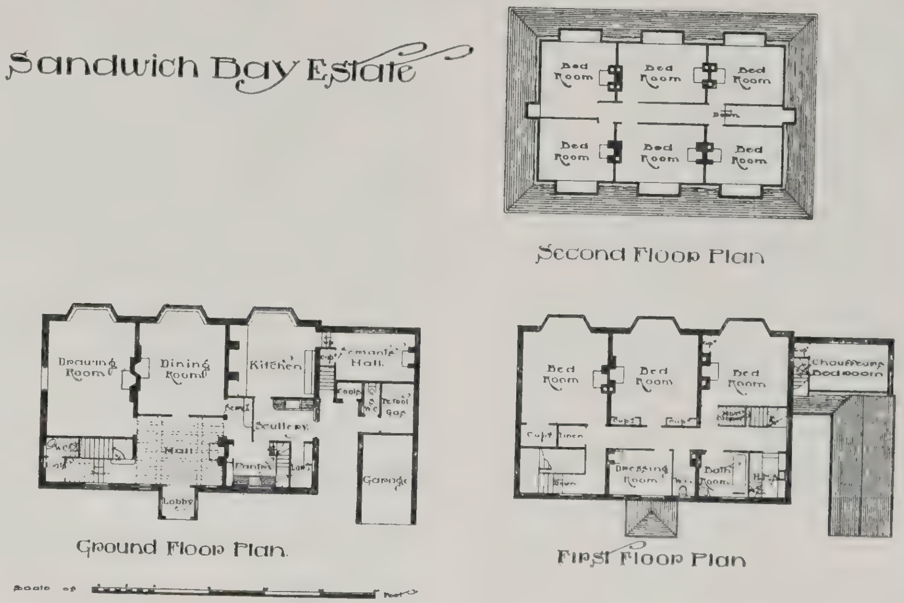
Garden Front.



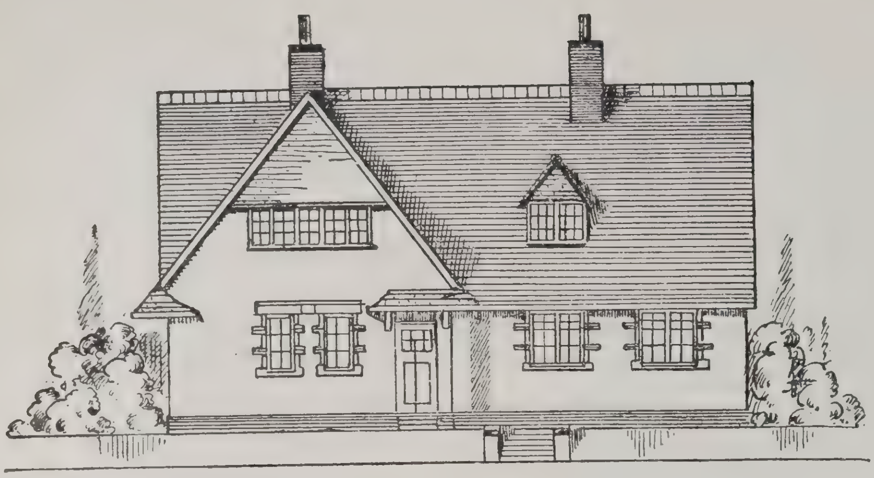
The Hall.



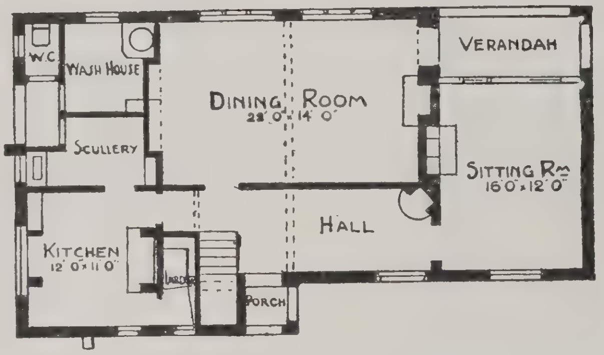
Drawing Room.



HOUSE AT SANDWICH-ON-SEA. F. E. WILLIAMS, A.R.I.B.A., ARCHITECT.



ELEVATION TO ESPLANADE



GROUND PLAN

BUNGALOW SCHEME FOR SOUTHPORT: A TYPICAL HOUSE.
F. G. DREWITT, ARCHITECT.

The dining-room is purposely planned to form a large "living room," being 13 ft. 6 in. by 12 ft., and having a recess for the side-board. An oval table will seat ten people with ease in this room, leaving ample moving space round. The roof is hipped, with projecting eaves, thus enabling the rooms in the roof to be square, without any splayed ceilings, which usually cramp the space of the rooms in the roof. The window boards of the second floor form the dressing tables, with a built-in chest of drawers underneath and hanging cupboards on either side. By utilizing the space in this manner great economy is obtained, as the floor is rid of the dressing table, chest of drawers, and wardrobe, though their accommodation is in the room. There only remain the bed and wash-stand to be provided, and consequently domestic labour is considerably saved.

The house at Sandwich-on-Sea, situated on the sand dunes close to the famous golf links, is on similar lines to the one at Kingsgate, but with rather more accommodation. The house was planned with the bay windows at the back to obtain a view of the sea. The external woodwork is of teak left to weather a silver grey, no paint having been used. A charming red mottled brick is used for the walls, and the roof, with wide overhanging eaves, is hipped all round.

The accommodation provided is dining-room, hall, sitting-room, drawing-room, 9 bed and dressing rooms, and offices. A separate service staircase leads from the kitchen department through the pantry to the housemaid's closet on the first floor. The house is constructed on a reinforced concrete raft cambering taper, that the sand below may not slide. The bedrooms are fitted in the same manner as those in the Kingsgate house. Both houses were erected by Messrs. Denne, of Walmer.

A Seaside Bungalow Scheme.

A building scheme has just been projected at Southport which will transform about forty acres of barren sandhills, stretching from the Birkdale boundary near to the Southport lifeboat house down to Weld Road, into a garden city. It is proposed to erect on the land, which will be divided into sixty plots, residences of the bungalow type, each standing in its own half-acre of ground, surrounded by gardens. The scheme also includes the widening of the present road to 70 ft. The present width of the road is 35 ft. It is stated in the "Southport Visitor" that in view of the Town Clerk's town planning scheme, the improvement would facilitate the carrying out of his plan for a circular drive round the Esplanade and back by Rotten Row. The whole scheme will cost £50,000, and if the Birkdale Council approves of the plans, at an early date the work will be put in hand before the winter.

The whole sixty plots have been let to the following local builders: J. W. Howard, Nicholas Wright, and W. Rimmer. The plans and all particulars can be seen at Messrs. Ball and Percival's, St George's Square, Lord Street, who are the agents for the properties. We reproduce a design, by Mr. F. G. Drewitt, showing the type of bungalow it is proposed to erect if the scheme receives the support of the local authorities.

THE RESTORATION OF ST PHILIP
BIRMINGHAM,

The tower of St. Philip's Church, B
mingham, has for some time been in pr
cess of restoration, and the work w
shortly be completed. The stripping
scaling of the outer surface of the wa
to render the masonry entirely safe h
been the main work of restoration. T
outer surface has been ruthlessly strippe
as it had all worn loose with the ceasel
action of wind and weather, and w
dangerous to pedestrians passing beneat
In parts, hollows have been chiselled o
and at close quarters the building h
even an increased appearance of antiqui
Every inch of the big tower face has be
overhauled, every loose particle havi
been removed. At the present the "
stored" walls are being treated to a p
cess of baryta water, which has the eff
of hardening the stone. In all, sixte
coats are to be administered, after whi
a coat of lime water will be laid ov,
and following this a layer of colour
tone the whole down to a uniform t
with the rest of the building. Of sto
work, nothing whatever has been add
to the tower, although much has b
taken away.

At the very top the cupola has be
re-leaded, and the bar of the cross
the extreme summit has been paint
The oaken pilasters supporting the do
of the cupola have in one or two instan
been repaired and replaced, and the w
at the top is completed, including
leading of the roof of the dome, wh
was in a very bad condition. The cl
face itself has not escaped attention.
rim has been secured, the hands and f
have been washed, and the figures h
been patched and re-gilded. The cornic
arches, and consoles of the tower h
been repaired, the joints of the corni
having been cemented and cramped w
copper, and also where necessary lead
re-fixed, and otherwise repaired.

The lead work of the roofs to the n
and aisles has been repaired, the br
work of the parapet has been renew
and the circular balls on the tops of
big ornamental urn-like vases wh
figure at intervals on the parapet
shortly to be replaced, as some of th
have crumbled badly. In one corner,
new balusters have been necessitated.
is expected that the work will be wh
complete by next month.

The Progress of King's College Hosp

The buildings of the new King's
lege Hospital, at Denmark Hill, are
approaching completion. The struct
of the out-patients' department and of
large central block containing all
administrative offices, the nurses' ho
and the main hospital corridor are p
tically complete, but a large amoun
plastering, painting, fitting, and sani
work remains to be done in them.
three-storeyed blocks of wards will e
tually be erected behind the central b
ing, and overlooking Ruskin Park.
these two are at present in hand and h
already risen above the ground f
which, probably owing to the ri
ground, is on a level with the first
of the central block. The medical sc
and other necessary buildings have
yet been begun, and in view of the am
of work to be done it is not expected
the Hospital will be complete until
Mr. W. A. Pite, F.R.I.B.A., is the a
tect.

THE NEW COLLEGE AT SANDHURST.

The new buildings for the Royal Military College at Sandhurst have now been completed under the direction of the Director of Barrack Construction, Mr. Harry B. Measures, M.V.O., F.R.I.B.A. The new College, which is nearly 1,000 ft. in length, with a depth of about 250 ft., is designed to accommodate six companies of cadets, who will be lodged in the two wings that flank the main administrative block. The principal feature of the latter is its dining-hall, where the six companies can find ample table accommodation. It is 156 ft. in length, 48 ft. wide, and 24 ft. from the floor to the centre of its domed ceiling. Each side wall is divided into six bays, which are lighted by lunette windows.

In the cadets' blocks the average dimensions of the rooms, of which there are 35 on each floor, are 11 ft. 6 in. by 9 ft. 9 in., with a height of between 10 and 11 ft. Each room is fitted with glazed hand-basins, and each floor contains four slipper and eight shower baths, with hot and cold water supply.

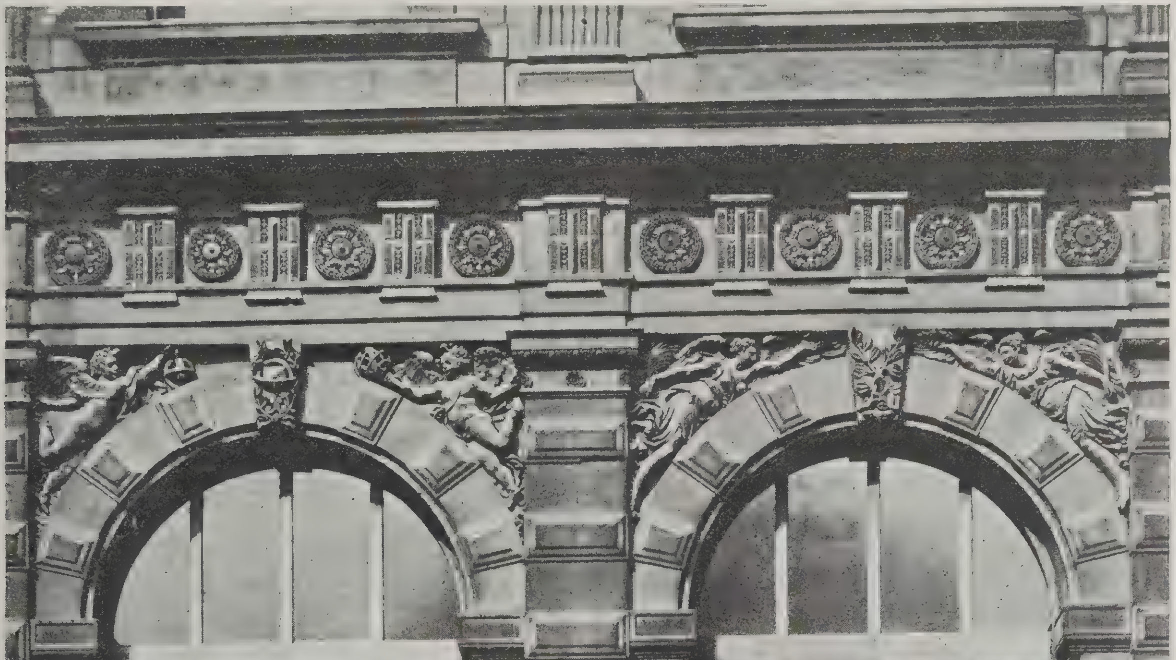
The new buildings, which, when completed, will have cost something like £250,000, have been erected by Mr. T. Rowbotham, of Birmingham, who is also constructing an electric generating station and quarters for the married non-commissioned instructors.

The new College has not yet been formally opened, but one wing is already fully occupied, and it is hoped that by Christmas the second wing will be ready. Then the older building will be handed over to the contractors with a view to the entire reconstruction of its interior.

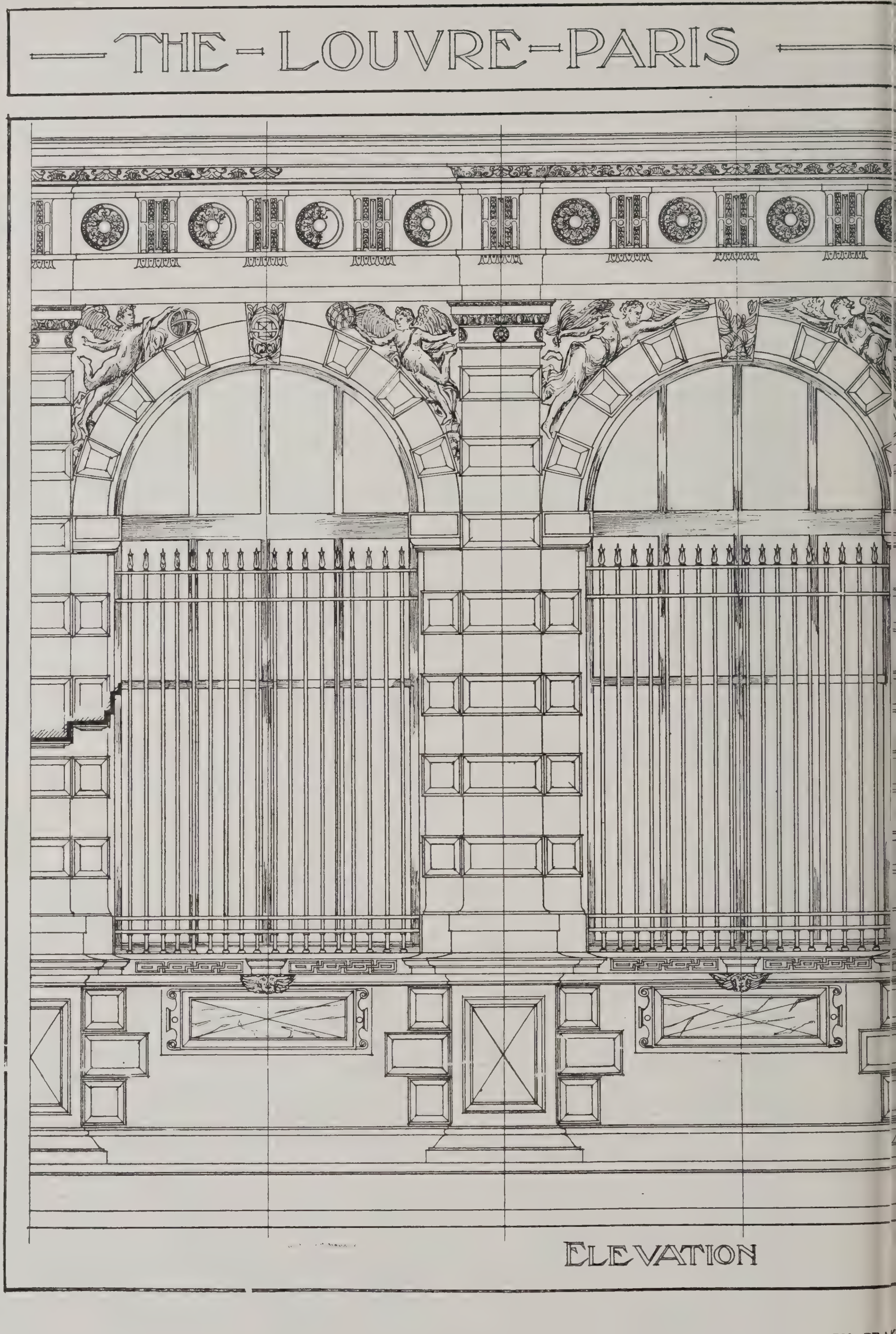
DETAILS, OLD & NEW.—XXVII.

Galerie d'Apollon, The Louvre, Paris.

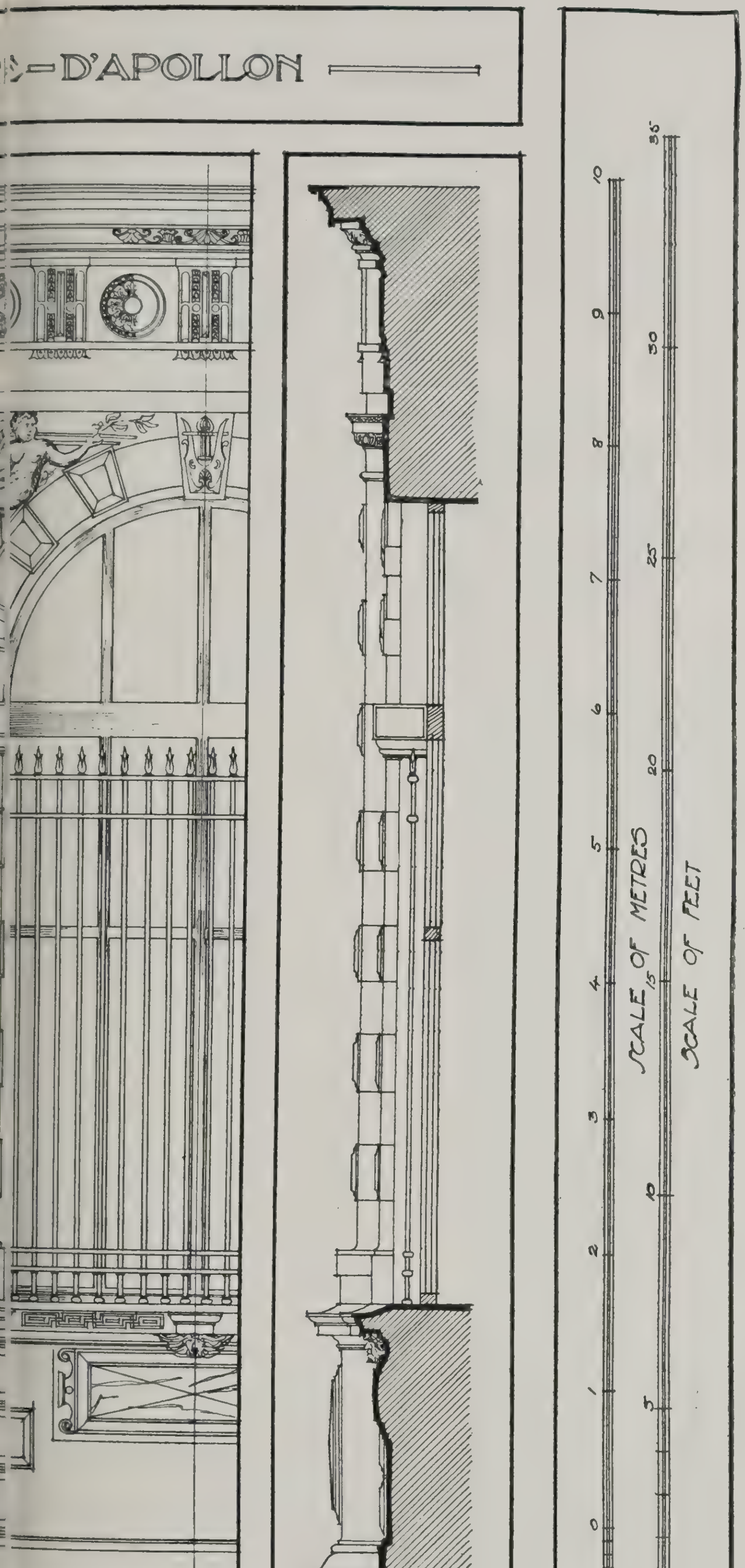
This is a detail of "La Petite Galerie," facing the Jardin de l'Infante. The design is attributed to Pierre Chambiges under Catherine de Médicis. Of the original arcade, only seven bays remain, three (as shown by the accompanying drawing) on each side of a central doorway. The sculptures in the spandrels are by Barthelemy Prieur (d. 1611) and represent Mechanics and Geometry, Fame and Music, Agriculture and Astronomy. The whole is of stone, with the exception of the small marble panels below the windows. The latter and the iron grilles are, of course, modern. The building was restored under the direction of Duban in 1849, but it is impossible to say exactly what he did.



TWO BAYS OF ARCADE, GALERIE D'APOLLON, THE LOUVRE, PARIS.



MEASURED AND DRAWN BY FRA



THE SCHOOL OF ART WOOD-CARVING.

The School of Art Wood-carving, 39, Thurloe Place, South Kensington, which has just been reopened after the summer vacation, has issued a prospectus for the session 1911-1912. This contains several good half-tone reproductions of some excellent work which has been executed in the School by students. One example is illustrated on page 317 of this issue. The prospectus gives full information concerning the work carried on at the School, (where, we are informed, there are now some free studentships available), and it includes also some interesting notes on wood-carving), by Mr. Walter Crane, R.W.S., Mr. A. S. Cope, R.A., and Sir W. Emerson, F.R.I.B.A. Mr. Walter Crane, writing on "The Treatment of Plant Form and Figures in Wood-Carving," says this has an important bearing upon the wood-carver's art, seeing that it relies largely upon foliated forms, leaves, and flowers, for its principal enrichment. When natural forms are used, and it is an object to represent definitely, but in an ornamental way, some known plant, regard should be had to its essential character and the law of its growth, and no attempt should be made, under the false idea of making it more graceful or decorative, to conventionalize it out of all resemblance to itself. The oak, for instance, should not be made to follow the lines of the clinging vine, or a rigid plant of vertical habit treated as if it were a creeper.

THE NEW Y.M.C.A. BUILDING.

The new building for the Young Men's Christian Association, which is now being erected in Tottenham Court Road, from the design of Mr. Rowland Plumbe, F.R.I.B.A., will shortly be completed.

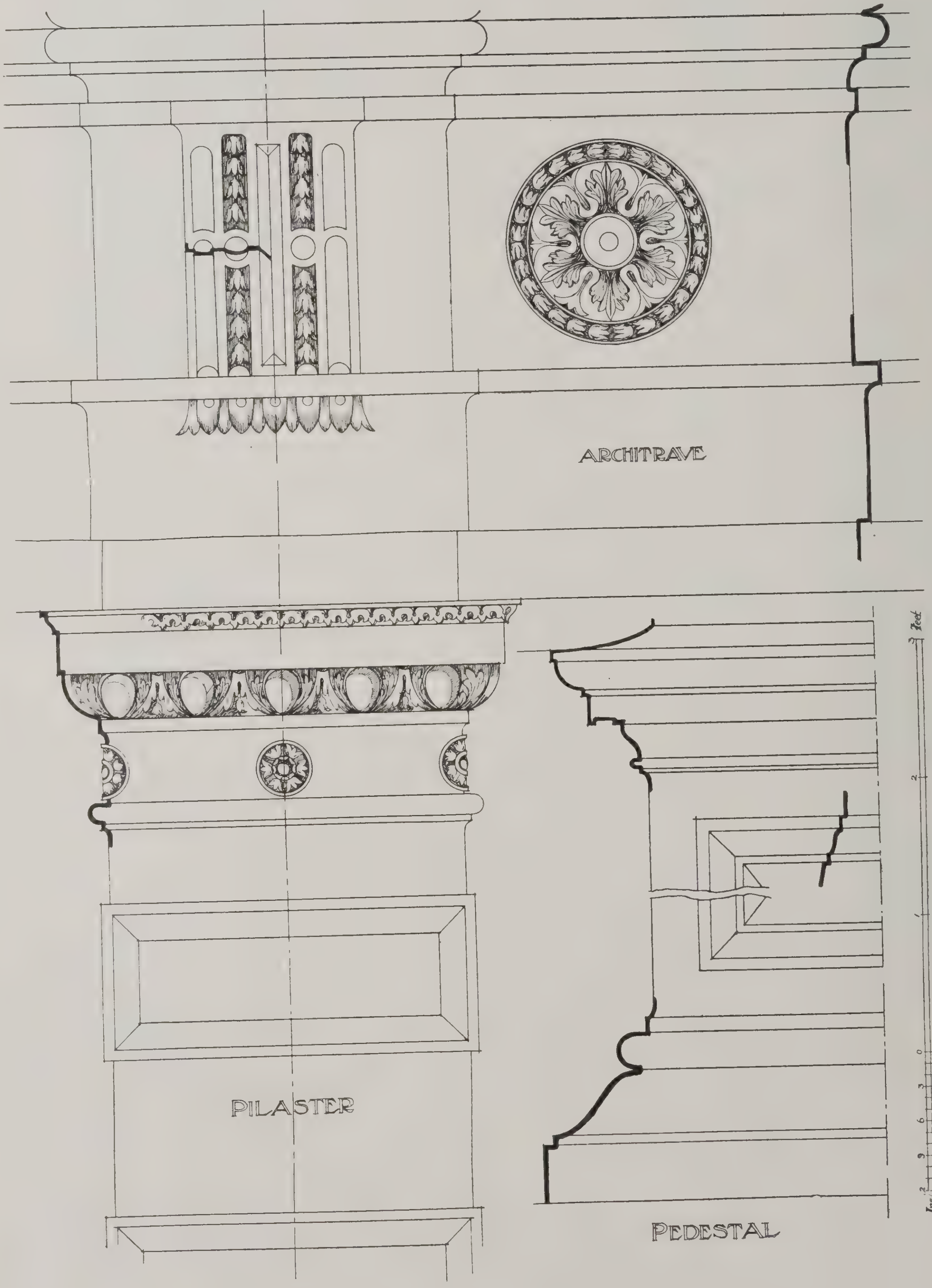
Only the great tower surmounting the building has now to be finished. As club, college, and hostel, it provides accommodation for 1,000 young men. There are two hundred bedrooms, which will be reserved for the use of youths from the country who have to live on a salary of 15s. a week. The rent of these bedrooms is only 3s. 6d. a week.

The building is built of Portland stone in a modern Renaissance style, is five storeys in height, and covers over 300,000 superficial feet. The tower will be 150 feet high. The four statues on the tower represent "Youth," "The Scholar," "The Athlete," and "A Citizen." There are five large shops in Tottenham Court Road façade, and in Great Russell Street is the Association's principal entrance, leading to a domed hall, with a circular staircase. A public restaurant, accommodating 250, a large hall for over 800, and another for 300, an organ gallery, and a cinematograph theatre have been built within the block. In the basement there are a gymnasium, with a spectators' gallery, a salle d'armes, a swimming bath, rifle-ranges, a bowling alley, and a boys' department, which includes a library, games-room, and lounge. On the first floor are a reception lounge, large reading-room, 100 ft. long and 40 ft. wide, a social room, and a games room.

Above is the educational department, with examination and class rooms, laboratories, libraries, and a complete photographic section. The model kitchen on the third floor is fitted with the latest steam-cooking appliances.

The total cost of the site and building is £200,000, and of this more than half has been subscribed by the public.

THE LOUVRE PARIS DETAILS



MEASURED AND DRAWN BY FRANK T. DEAR.

LEGAL.

ditions Held Not To Constitute a New Buildin .

eople contemplating additions to their
uses are often deterred on account of
ubts as to the exact requirements of
local authorities. Others, thinking
t the desired improvements do not con-
n the district surveyor at all, proceed,
afterwards find themselves sum-
ned before a bench of magistrates to
wer a quasi-criminal charge. A case
this kind was recently decided by the
nty magistrates at Canterbury, when
. A. Wooldridge was summoned at the
tance of Mr. F. A. Ward, Surveyor to
Blean Rural District Council, for
ged breach of the Council bye-laws by:

1) Not providing a proper damp-proof course in connection with additions to his house;
2) Constructing a sleeping room less than eight feet in height;
3) Not properly constructing a hearth;
4) Not causing work to be laid open for inspection;

t the hearing Mr. Wooldridge was
epresented, while the District Council
represented by Mr. Burch, solicitor,
clerk to the authority.

rom the evidence it would appear that
Wooldridge contemplated adding two
ns to his house—a typical old-fashioned
-house of brick and tile, long and
, quite shallow from front to back, and
ated some distance from the road, near
th, a few miles out of Canterbury.
n many other old Kentish farm-houses,
eaves are low—only a few inches above
heads of the ground floor windows—
the first floor rooms are formed com-
ely in the roof.

he addition consisted of a new sitting-
at the end, with a bedroom over;
the elevations are treated in a different
from the old, being of timber-framing
brick base. The eaves of the new
had been made higher than those of
old structure, in order to obtain better
for the bedroom, and to permit of
nary casements and frames in contrast
he dormer windows in the old part.
wings were duly submitted; but before
were ultimately approved—for the
ding owner was called upon to rectify
ral points—the work had so far pro-
sed that it was impossible for the Sur-
r to make a detailed examination,
ough a surface inspection showed
ts which were not in accordance with
ye-laws. When the case had proceeded
far, the Bench intimated that they
not clear that the additions consti-
a new building. Mr. Burch quoted
case in which a conservatory turned
a bedroom had been held to be a new
ling, and contended that, this being
he addition of a bedroom and sitting-
would surely constitute a new build-
in the meaning of the Public Health
under which the Council had framed
bye-laws. After consultation, the
h decided to hear the case before
ling the legal point involved, but in-
ted that in any event the charge of
enting the Surveyor from examining
vork would be dismissed; and, as re-
s the other issues involved, suggested
djournment for a week to enable the
to be laid open in places to permit
urveyor to make a detailed examina-
as there was a conflict of evidence, as
faulty hearth and damp proof course.
defendant admitted that the bedroom
not of the pitch called for by the
aws.

At the adjourned hearing of the case the Surveyor gave evidence, based upon his further and complete examination, that the damp course was less than 6 in. from the ground, and that the hearth was not of the required thickness.

The Bench ultimately arrived at the conclusion that the works were merely an addition to an old building, and not of such a character as to constitute a new building within the meaning of the bye-laws.

LONDON AND COUNTY BANK, BRIGHTON.

The accompanying illustrations show the new premises of the London and County Bank, in Castle Square, Brighton, which have been erected from designs by Mr. Godfrey Pinkerton, F.R.I.B.A., of London. The existing premises having become too small for the volume of business, adjoining property was acquired and the whole adapted or reconstructed. This was a work of some difficulty, as the business of the bank had to be carried on whilst the rebuilding was in progress. The basement is occupied by strong-rooms, heating chamber, lavatories, etc. The first and second floors are planned for offices, and the top floor as a residential flat. The stone used for the exterior is, for the ground floor, red and white Mansfield, and above that Ancaster from the Lindley quarries. The public space, lobby, passage and office entrance hall are paved with black and white marble, the columns, cornice, coffered barrel-vault, dado, etc., being in black and white cement. The bank fittings, screens, doors, and window finishings throughout are of teak with ebonized mahogany mouldings, glazing bars, etc. The counter front is inlaid with ebonized mahogany and hollywood. The stone-carving and most of the modelled plaster was executed by Mr. Michael Murphy, of London, from the architect's sketches; the marble work of the chimneypiece in the public space—illustrated on this page (Greek Cipollino and yellow statuary)—is by Messrs. Farmer and Brindley; and the copper grate by Messrs. Bratt, Colbran and Co., who also supplied most of the other grates. The electric lift is by the Otis Elevator Co.

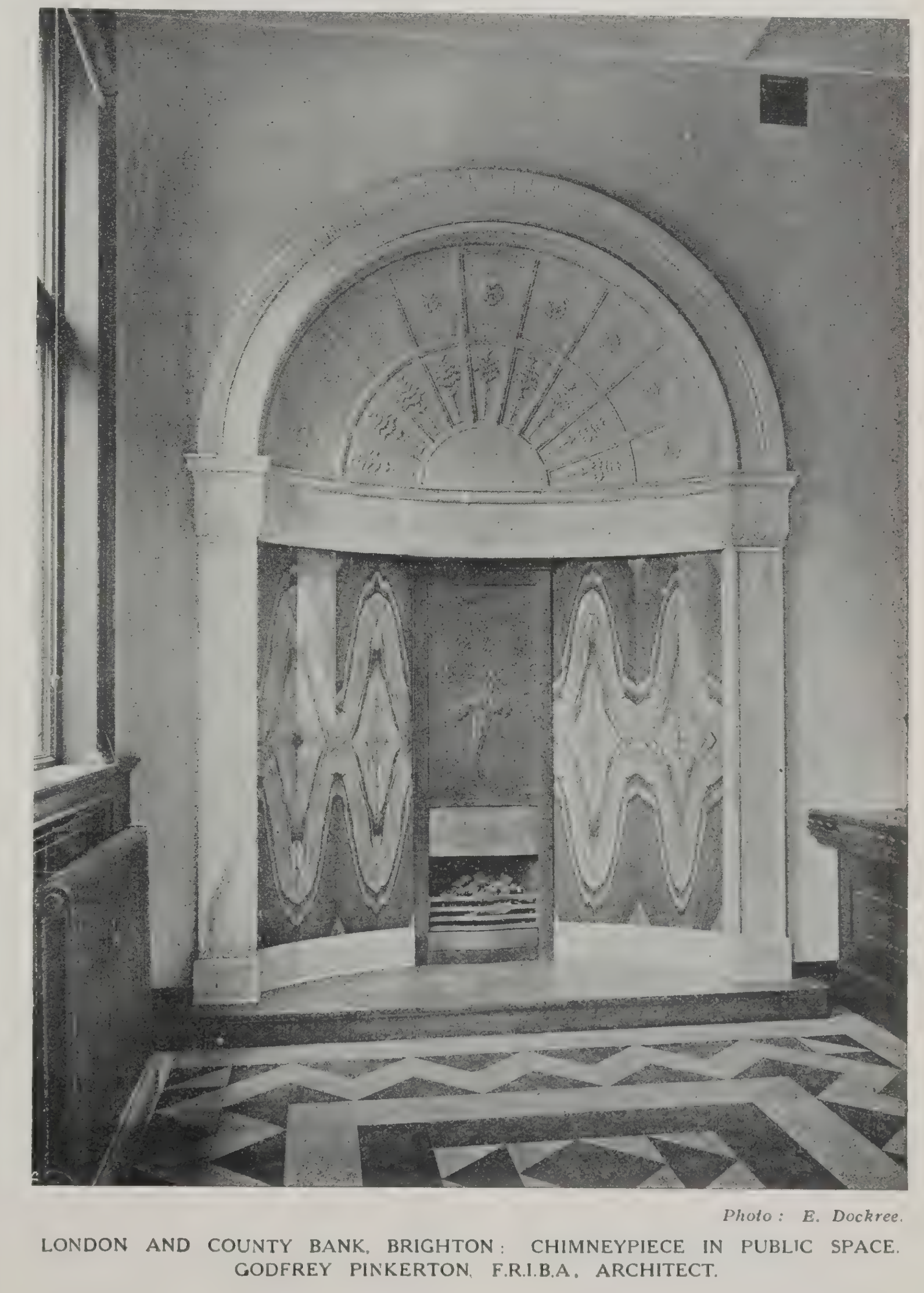


Photo: E. Dockree.

LONDON AND COUNTY BANK, BRIGHTON: CHIMNEYPIECE IN PUBLIC SPACE. GODFREY PINKERTON, F.R.I.B.A., ARCHITECT.

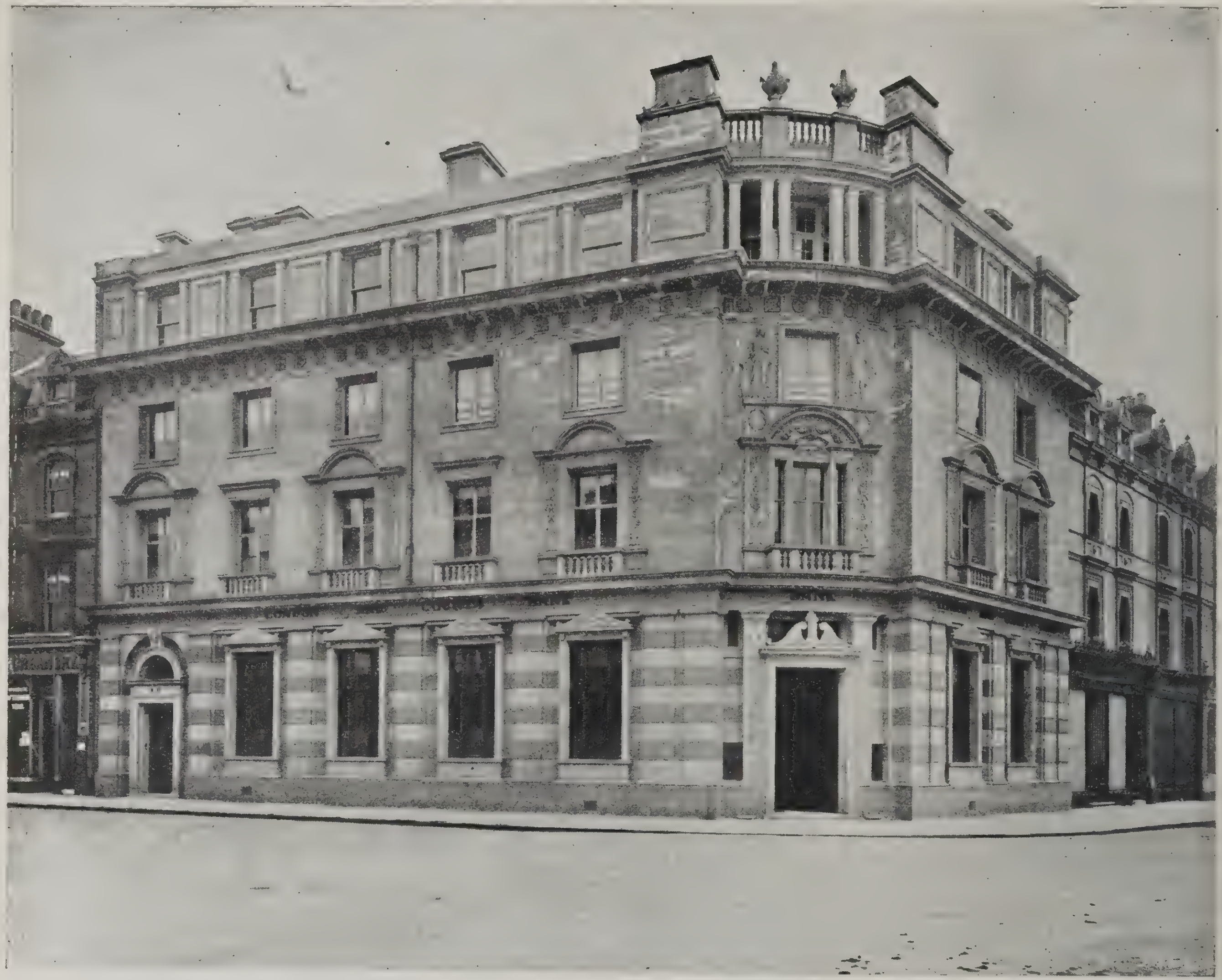
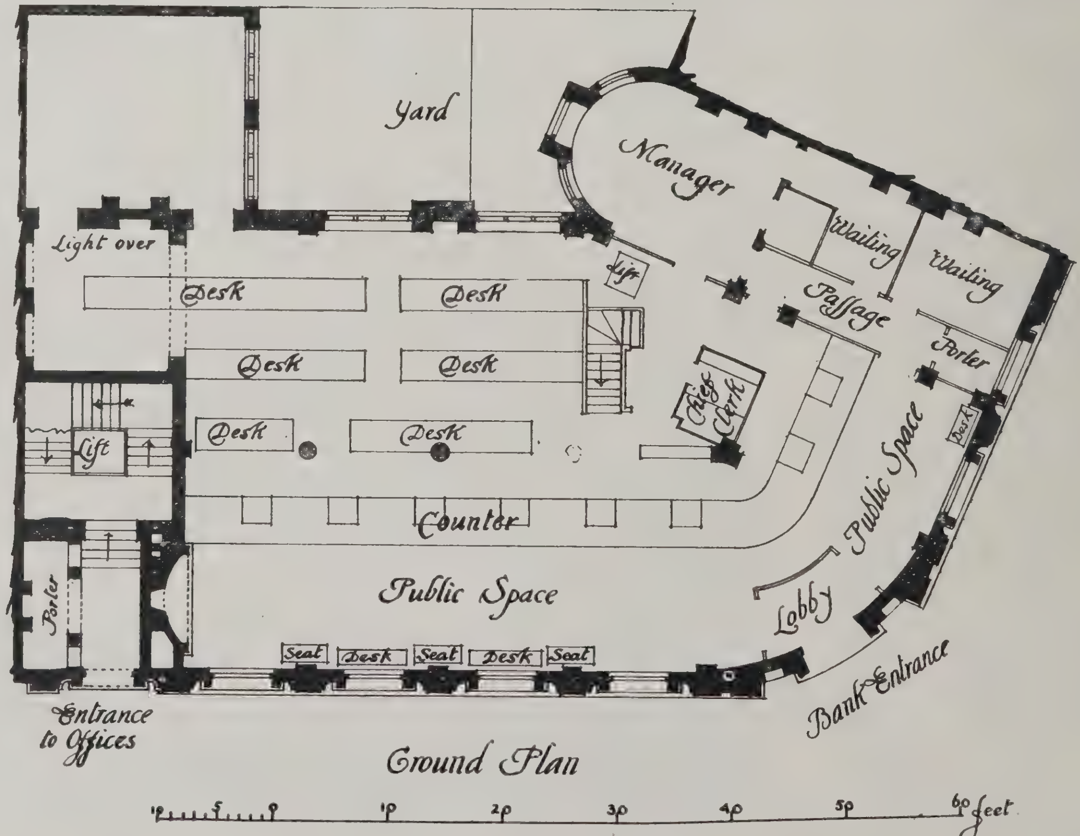


Photo: E. Dockree.



LONDON AND COUNTY BANK, CASTLE SQUARE, BRIGHTON. GODFREY PINKERTON, F.R.I.B.A., ARCHITECT.

BUILDING INTERESTS IN SOUTH AFRICA.

rom Our Special South African Correspondent.)

August 28th, 1911.

The Rand as a "Distributing Centre."

I pointed out in a previous article that e Rand was becoming more and more a distributing centre" for the whole of ɔuth Africa, and the evidences are grow- g on every side in proof of this so far the gold-fields are concerned. It is the d-established merchants who demon- rate the fact by rebuilding huge pre- ises, and enlarging their present exten- ve ones. Two notable instances may mentioned, and others could be given necessary, but a reference to my former tters will suffice. In the first place we id one of the very oldest merchant firms South Africa, Messrs. Randle Bros. id Hudson, completing a huge block, mprising possibly the largest ware- ıuse of its kind in Johannesburg. Then have another of the oldest houses—essrs. Chudleigh Bros.—rebuilding a ıge block covering six stands in Eloff, itchard, and President Streets, the cepted tender for which was £72,750. ıese are recent additional proofs of the nfidence of merchants in the future ıbility of the Rand. The centralisation ıich is growing may further be em- ıasised by the fact that even property in the Cape is auctioned at the Rand to a greater extent than ever.

Employment of Apprentices.

The "Transvaal Leader" has had an interview with Mr. Jas. T. Brown, who is the General Secretary of the National Federation of Master Builders in South Africa, and also the proprietor of the "South African Builders' Journal." Mr. Brown is therefore about the best qualified man to give an opinion upon a momentous question such as apprenticeship. It may be pointed out that, generally speaking, builders do not care to take on apprentices, work fluctuating so much that, when a contract is finished, the shop concerned may be practically closed down for a time. "Take the stonemasons," said Mr. Brown. "Until quite recently, when extensive public works were started, there were very few stonemasons in South Africa. What, then, would be the sense of engaging apprentices unless there is a guarantee of continuity of employment? . . . It is different in the case of joinery and other allied trades, such as plumbing work, plastering and bricklaying. There is some sense in asking lads to learn these trades, because there is always a guarantee that there will be continuous employment. The Master Builders' Association in Johannesburg has drawn up a special form of indenture, which binds apprentices for several years. A form of indenture is all very good; but in the first place, parents are not always inclined to allow their boys to be indentured. There is another reason. In South Africa, while trade in the past has been so uncertain, there has never been any guarantee that in future the father of the boy will be in continuous employment in that particular town himself; consequently he is afraid to bind his son as an apprentice, in case he may have to leave the particular centre in which he is working and go to another." So there are many difficulties, even allowing that the indenture provides for the transference of the boy from one employer to another to complete it. The boy, however, may find that he can get higher wages from another employer, and naturally he is inclined to go to the man who offers bigger pay, that is, perhaps, after he has served three years or so with his first employer, to whom he was just beginning to be useful.

Coloured Labour.

The encroachment on skilled trades of coloured labour is another of these matters very much in the public mind, and it is growing more and more in importance. I mention this question again because of a Blue Book which has just been issued in connection with the White Labour Department of the Transvaal and Cape Provinces, and relative to the Labour Bureau. The document deals with the class of "blacks" who constitute the coloured factor. It says: "The problem at the

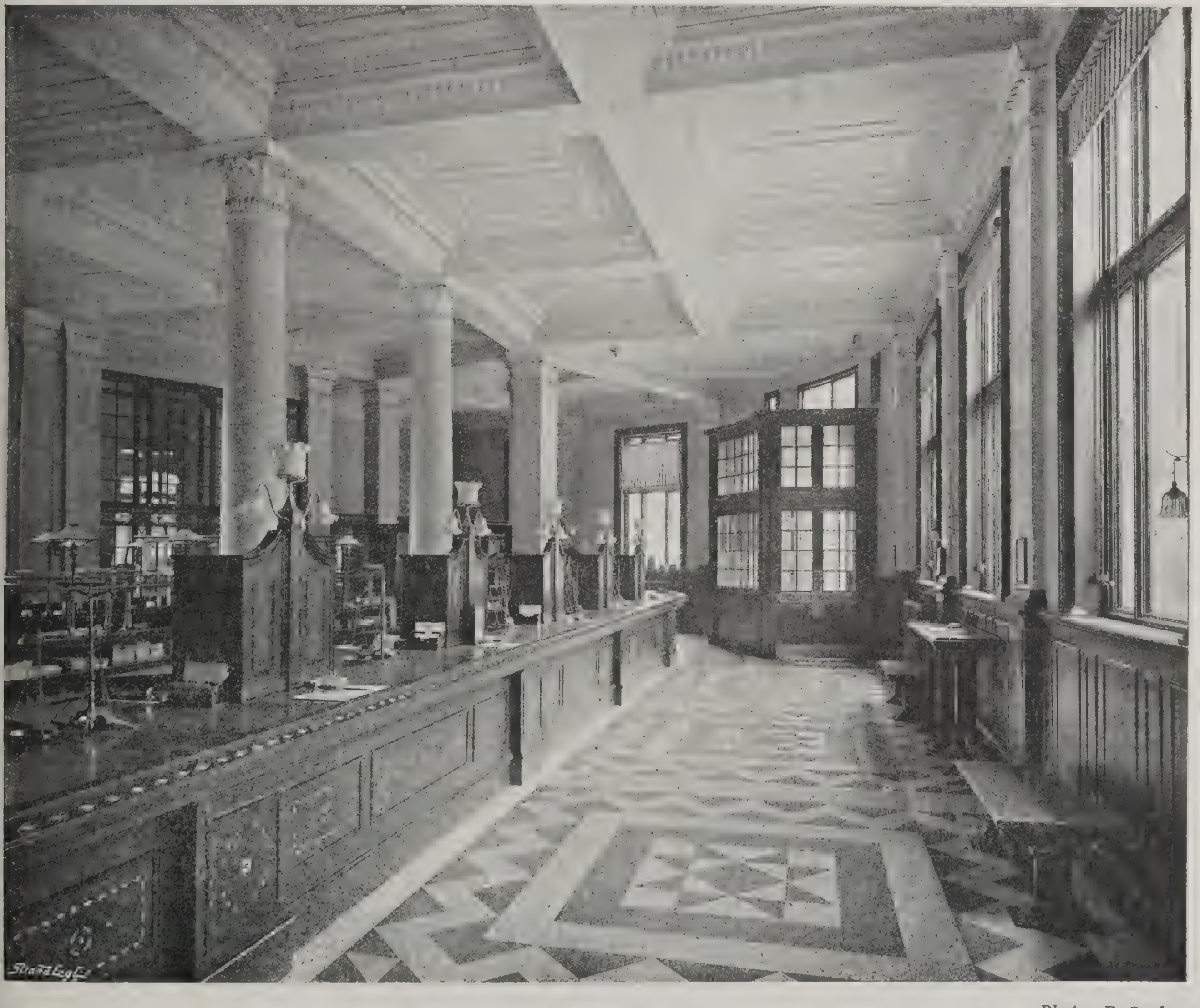


Photo: E. Dockree.

LONDON AND COUNTY BANK, BRIGHTON: INTERIOR OF BANKING ROOM. GODFREY PINKERTON, F.R.I.B.A., ARCHITECT.

coast is one between the somewhat migratory white and a settled coloured race, composed very largely of a mixed race; partly of Malay and other Asiatic extraction; and partly of native African descent, but in which the African is not, as a rule, predominant. This race is able to adapt itself to modern industrial conditions in a remarkable manner, and to-day provides a large section of the skilled labour force in most of the trades of the Western Provinces." It is this very class of people who have invaded the Transvaal, and have become a menace to the building trade on the Rand. The problem appears to be one that will not be settled for generations.

Industrial Disputes Act.

The same Blue Book refers to the Industrial Disputes Prevention Act of the Transvaal, and points out that in regard to the prevention of strikes, the Act appears to be somewhat uncertain. I should think, personally, from my knowledge of its working, that the Act generally has been a complete failure, and rather encourages disputes. This is how the Act is described in the Blue Book: "The intention is to bring the force of public opinion to bear on the merits of a dispute, and incidentally to give the parties an opportunity of coming together and arriving at a mutual understanding. It does not contain the element of compulsion, which was the characteristic and the cause of the failure of the earlier Australian Acts. The effectiveness of the Act must, therefore, in the long run, to a large extent depend on the force of the public opinion existing when the facts of any dispute are published, and the extent to which that public opinion is respected by the disputants." As a matter of fact the Act allows the employee to put the employers to a great deal of unnecessary expense in putting forward absurd complaints for dispute which the latter must defend. Then follow the proceedings in an Arbitration Court, whose award becomes as nil, because there is no power given to enforce it. The whole thing reduces itself to a farce, and the workmen as a rule lose, as witness the masons and bricklayers' disputes here, while the employers have to pay the piper. The Act does not want amending; it wants obliteration.

Building Statistics.

With regard to building statistics, in July there was an increase in Johannesburg, but it will be considerably more for August. As a matter of fact, the value represented by all structural alterations and new buildings in July, as approved by the architectural and building branch of the Johannesburg Town Council, was £134,094, as compared with £113,143 in the previous month. Drainage connections are placed at a value of £2,371; in the previous month expenditure here was £2,446. The sum total for the period was £136,465; in June it was £115,589. The increase over the previous month is £20,876. The official returns show the following main classification respecting new structures in the period dealt with: Dwellings 121, rooms 184, shops 13, offices 11, sheds 54, stables 21, stores 7, and workshops 7. There were 66 additions and alterations to domestic buildings authorised, four additions and alterations to public buildings, four churches and "other public buildings," three additions and alterations to warehouses, two warehouses, one eating-house, and one bakery. The number of separate buildings or tenements shown on the July plans was 597.

Labour Prospects.

I take the following from the July report issued by the Government Labour Bureau, Cape Town: "No improvement can be recorded in the local demand for labour, the vacancies for European artisans in particular being few; but, at the same time, it cannot be said that there is an appreciable number of first-class artizans unable to secure engagements, and in this respect it would appear that the demand is balanced by the supply. In the building trade there is a prospect that several structures will shortly be put in hand, including the Anatomical Laboratories for the South African College, the East End Public School, buildings at Campos Bay and Murzenberg, and new schools at Wynberg. The present outlook is therefore hopeful."

NEWS ITEMS.

"The Electrical Engineer."

The above journal signalises its 29th year of issue by a reduction in price to 2d. weekly, and by a simultaneous increase in the number of its pages.

A New Asylum.

The Borough Council of Gateshead have agreed to accept the tender of Messrs. Wm. Moss and Sons, Ltd., of Loughborough, for the erection and completion of the new asylum at Stannington. The price is £76,000.

Oxford Statue to Cecil Rhodes.

A statue to Cecil Rhodes has just been placed in a niche on the facade of the new Oriel College Buildings, Oxford, which were erected out of a legacy left to the college by Rhodes.

New Parish Institute, Lowestoft.

A new parish institute is now being erected at Lowestoft from the design of Mr. H. C. W. Blyth, M.S.A. It is a two-storey building, comprising a large hall with classrooms, etc. Messrs. Mobbs Bros. are the builders, the estimated cost being £4,000.

The Admiralty Library.

On Thursday last, Mr. McKenna formally opened the Admiralty Library and Reading Room, which is an apartment, about 100 ft. in length, at the top of the Processional Arch at the Charing Cross end of the Mall. Sir Aston Webb, C.B., R.A., and Mr. E. Ingress Bell, F.R.I.B.A., were the architects

Central School of Arts and Crafts.

The Central School of Arts and Crafts, Southampton Row, was reopened on Monday, September 18th. The work in the school of architecture and the building crafts includes architectural design and drawing, building construction, structural mechanics, letter cutting in stone, wood carving, ornamental leadwork, ironwork and bronze casting. There will be a course of lectures on Wednesday evenings from 8.15 to 9.30 dealing with the growth of a house. The whole of the details, including site, drainage, hot-water supply, etc., will be explained, and all students taking elementary design will be expected to attend. A Saturday afternoon class to study the best examples of old work, will
be held from 2.30 to 5 at the Victoria a
Albert Museum. The classes in archit
tural design, building construction, a
architectural drawing are directed by M
S. B. Caulfield, F.R.I.B.A., and Mr.
H. Mansford.

Memorial Window to George Eliot.

At a cost of about £250 a stained-gl
window is to be placed in "George Eliot
church at Chilvers Coton (Warwickshi
which she has immortalised in her "Sce
From Clerical Life."

Douglas Pavilion.

Douglas Town Council last week vo
the first premium of £200 to Mr. Percy R
inson, F.R.I.B.A., of Leeds, for his des
for a pavilion on the Villa Marine Esta
which has been purchased for £60,0
and is to be converted into a public pl
sure ground. For the erection of
pavilion there is a tender of £16,230, wh
is within the stipulated price.

Rights of Light.

After depriving some of the reside
of St. Mary's Terrace, Paddington,
light for more than four years, the P
dington authorities have just removed
light-screen on the understanding t
they are paid at the rate of one shill
per window per annum. The screen
weighted down with stones at the bott
because it stands on consecrated grou
in the churchyard, where, of course, d
out foundations are not allowed.

Discovery at St. Alphage, London W

A small portion of the plaster in
porch of St. Alphage, London Wall, h
ing broken away recently, it was
covered that the fabric beneath consis
of flint with stone dressings. All the plas
has been carefully removed, and the po
has been restored to its original cor
tion. The church of St. Alphage was bu
in connection with the Priory of Elsy
Spital, in 1327.

Sale of Trentham Hall.

Trentham Hall, Staffs, which has b
sold by the Duke of Sutherland to c
tractors, came under the hammer
Thursday last. The central tow
designed by Sir Charles Barry, was w
drawn at £50. The turned stone r
balustrading realized £110, while
carved decorations of the billiard-ro
went for £56. There was a remarka
dearth of buyers, and the total of the f
day's sale was only just over £300. T
marble stairs and flooring changed ha
at low prices, while many lots were uns

Rosyth Building Contract.

Messrs. Easton Gibb and Son, the
miralty's contractors at Rosyth, have s
let the building contracts there (for ab
£70,000) to Messrs. Robert Thorburn
Sons, of Edinburgh. The buildings
consist of a pumping station, an electr
power station, a boat-house, and a sub-el
trical station. For the mason work an er
mous quantity of stone will be requi
The Tilbury Contracting and Dredg
Company (Limited), of Westminster, h
secured a contract for the supply of so
200.000 cub. ft. of freestone from t
Walldean quarries, to be used in the c
struction of the buildings.

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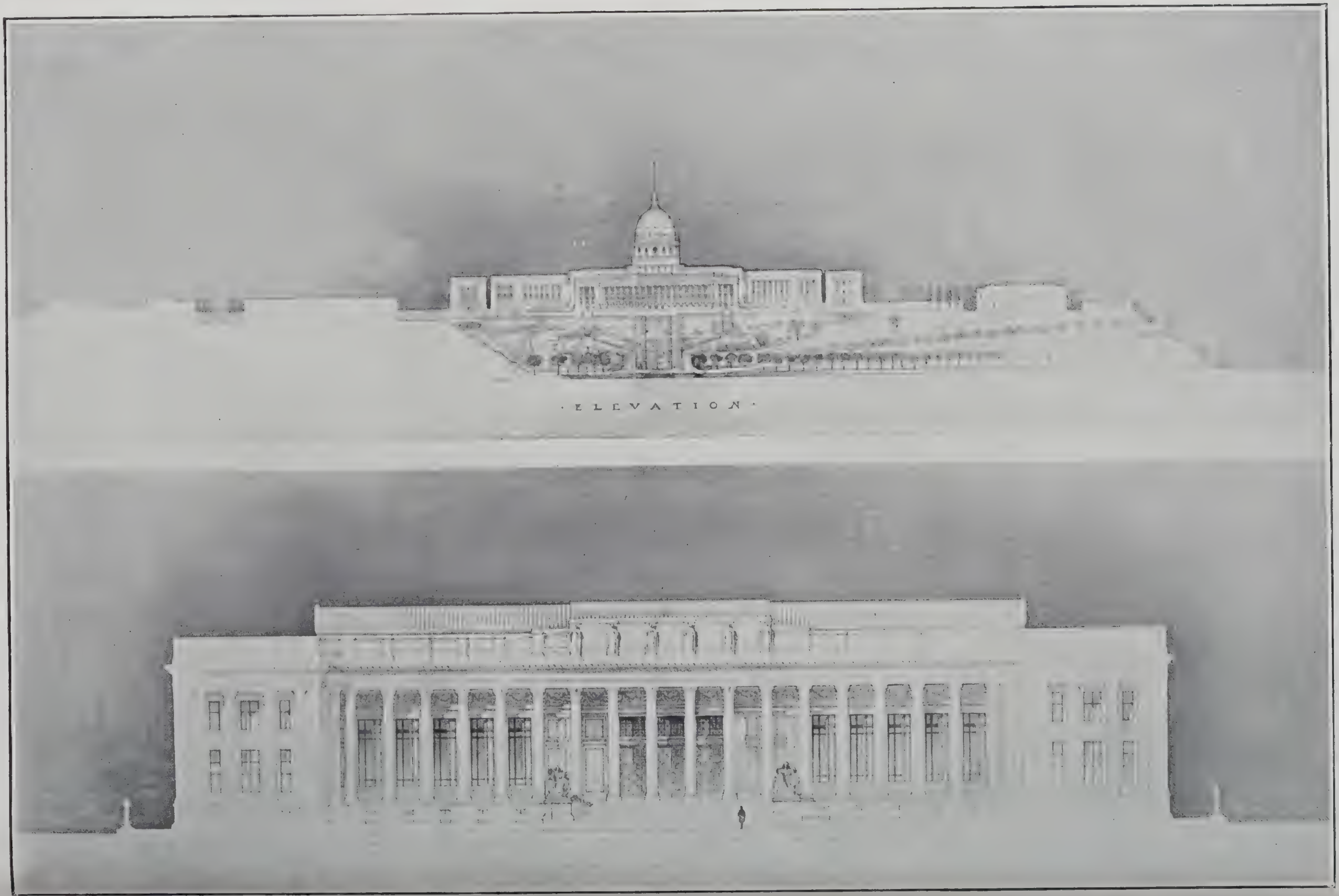
Supplement to The Architects' and Builders' Journal, *Wednesday, October 4th,* 1911.



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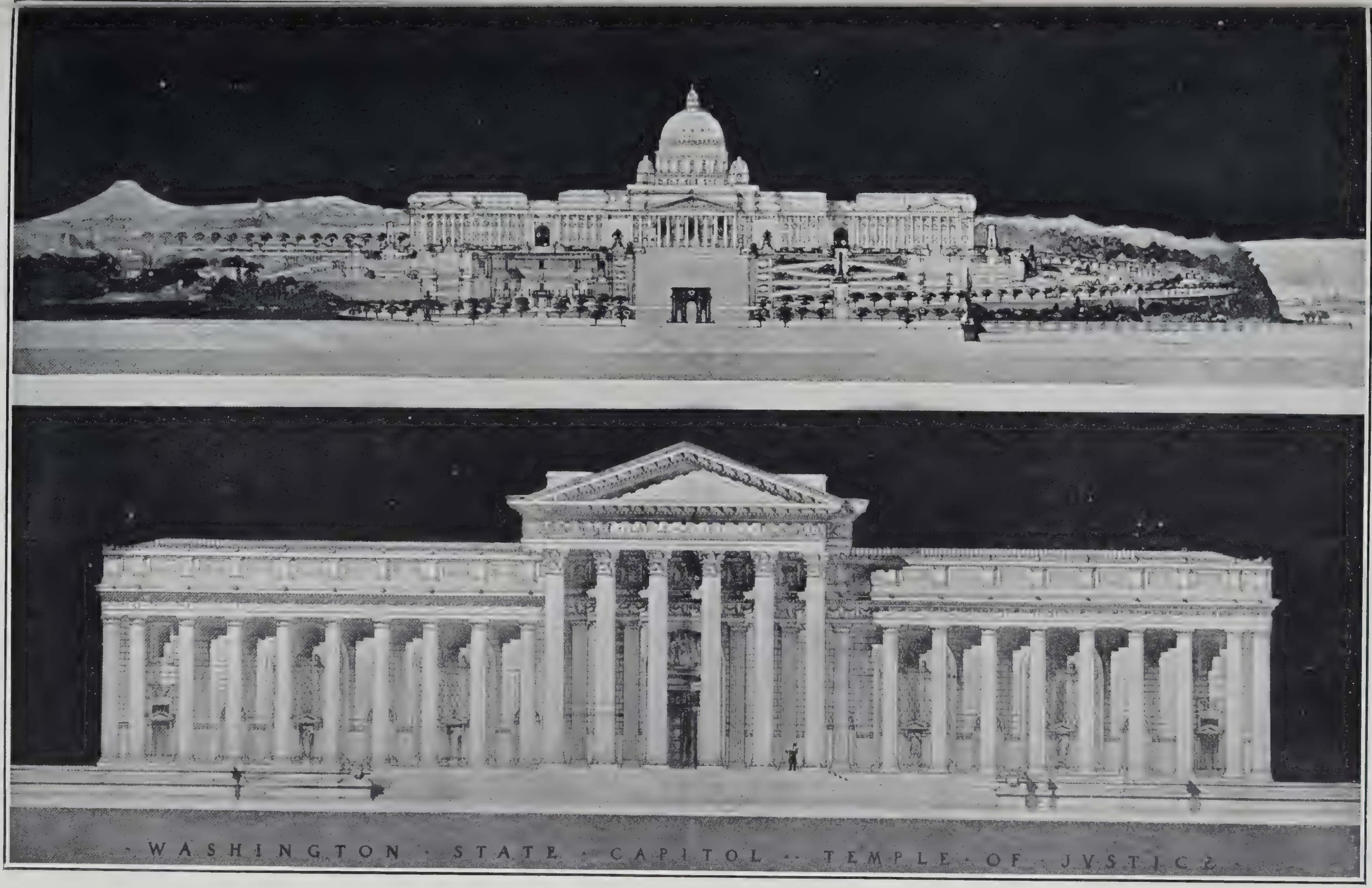
· WASHINGTON · STATE · CAPITOL · TEMPLE · OF · JVSTICE ·

DESIGN-PLACED SECOND. HOWELLS AND STOKES, ARCHITECTS.

WASHINGTON STATE CAPITOL COMPETITION.

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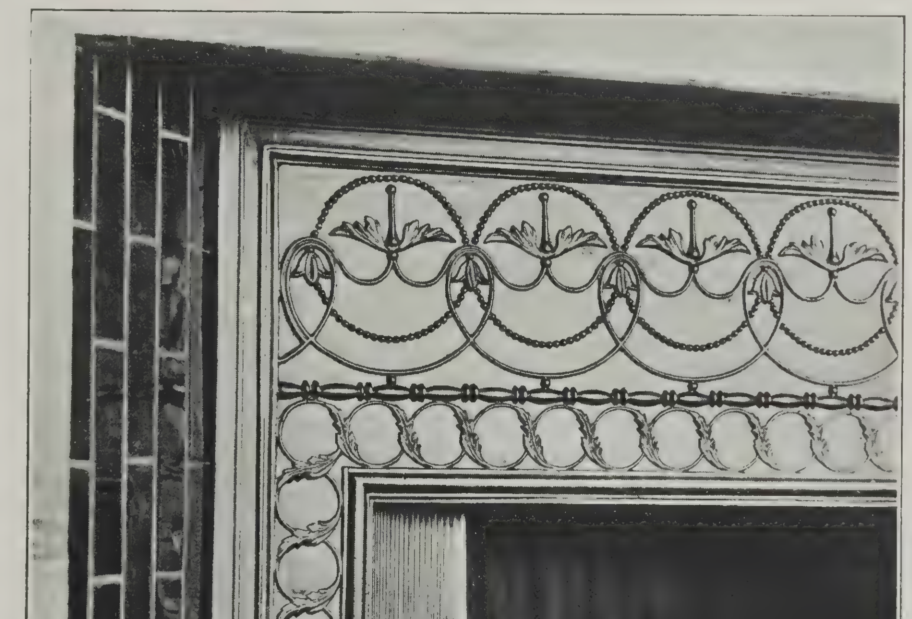
THE ARCHITECTS' &
BUILDERS' JOURNAL.

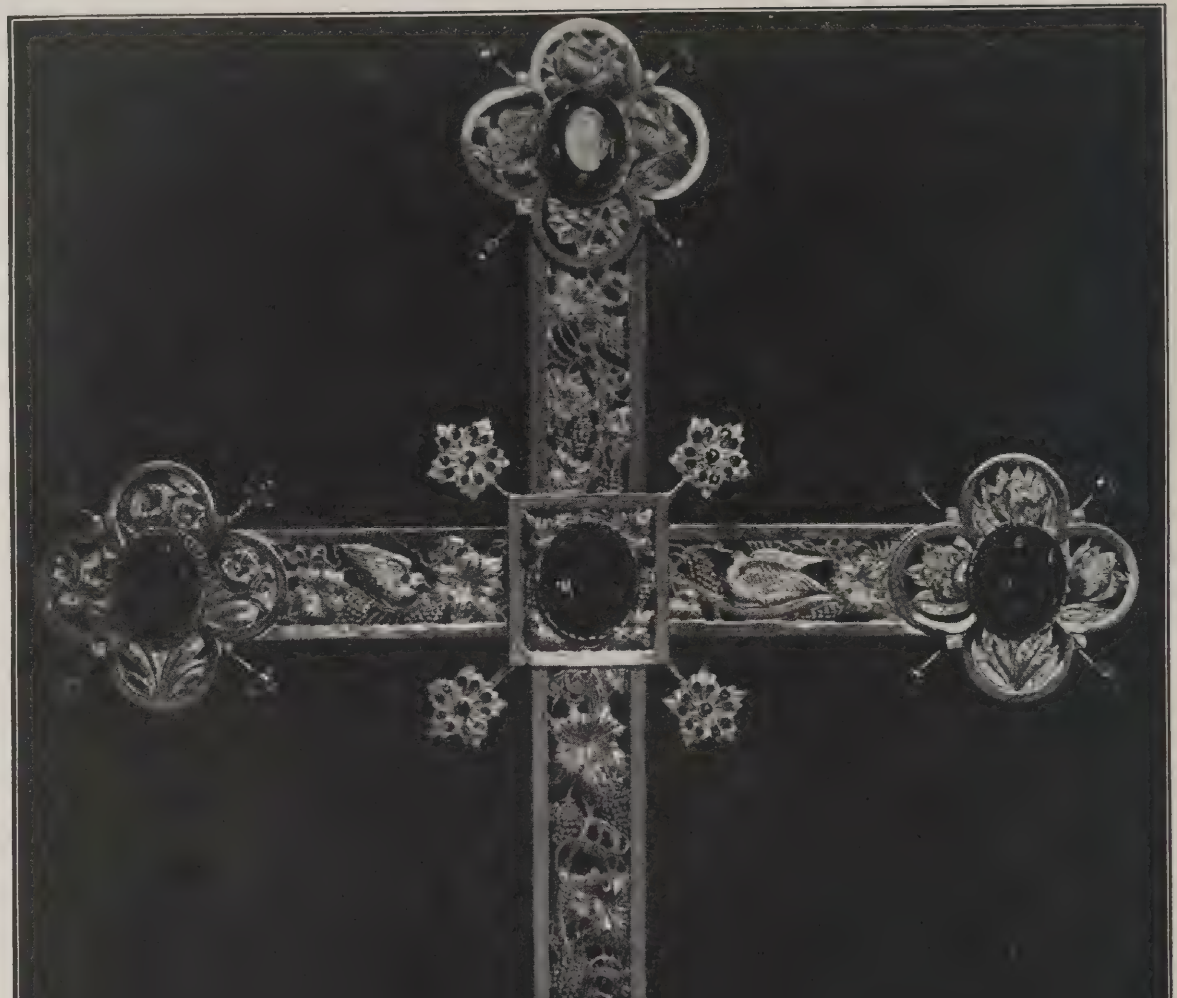
WEDNESDAY,
OCTOBER 4th, 1911.

Volume XXXIV. No. 871



This was designed by Professor W. R. Lethaby. The architect of the house was Mr. Geoffry Lucas, A.R.I.B.A.

DETAIL OF CAST-IRON FIREPLACE IN A HOUSE AT BALDOCK, HERTS.



This cross is of silver, the arms being 2 ins. wide and 1 in. thick. The pelican, symbolical of self-sacrifice, is introduced into the lower part, and doves symbolising the Holy Spirit are interspersed amongst the vine foliage. The large stones are opals, while small sapphires are used for the centres of the flowers.

PASTORAL CROSS FOR ST. CRANTOCK CHURCH, CORNWALL.

EDMUND H. SEDDING, F.R.I.B.A., ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

OCTOBER 4th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 871.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

On Reality in Modern Architecture.

IT is a melancholy commonplace that the public, of this country at least, care nothing for architecture. The indifference is partly because architecture is a symbolical art and not an imitative one, and a public not nationally artistic cannot take the trouble to consider symbolical mean-; a picture or a statue is (or they think so) an imitation of ething in nature, and they can compare it with the original; architecture is not an imitation of anything, and its good ad quality is a matter of reasoning, which is too much ible. So they prefer to compare it with other and older itecture, which seems to have acquired an authority someig like that of nature; and modern architecture is good or , to them, according as it conforms to these accepted dels.

ut among the people who do think, and who have a little e penetration than this, there is a feeling, sometimes plainly ressed, that architecture is not a very real art nowadays; ainly not as it was when the cathedrals were built, and that impossible to get up a very keen interest in it; and there certainly some architects who feel the same; possibly there a good many. One gets rather a curious light on the ject in comparing the meetings of the Institution of Civil gineers with those of the Institute of Architects. The gineers' meetings are nearly always crowded, and the papers l are evidently followed with close attention. The Institute tings to consider purely architectural subjects are too often listless and poorly attended. The only subjects which certain to command a full meeting and animated discus- at the Institute are those wretched disputes about proional politics, which are not architecture at all.

here is a more eager interest in purely architecl subjects shown at the meetings of the Architectural ciation, though in its ranks also there seems to be a good of difference of opinion as to what architecture, for the ent day, really means; and an effort to define what it ns, or what is wanted to give it its true meaning, is what through the interesting opening address of Professor Pite, vered a few days ago, which we print on pp. 356 *et seq.* gist of it may be taken to be that we do not pay sufficient rd to construction as the basis of architecture. He points that a knowledge of the forms of architecture and a wledge of building construction are separately studied, as basis for examination and for subsequent practice, and a good deal of the superficiality of modern architecture s from this divorce between construction and design. We already said that we think the requirement, in the Archiral Association School, of designs for buildings in this at style, is a mistake. It may be a good test, no doubt, cquaintance with an historic style, but it rather goes off right track of architectural designing. Instead of ask- student to design a church (for instance) in the Byzantine , ask him simply to design a church, and to consider, in g so, how it would be best planned and constructed, and how to give expression in design to such plan and construction. This would be much more in accordance with the general tendency of Professor Pite's address, and possibly therefore the point may have serious consideration.

Professor Pite says much as to the importance of the architect taking an interest in the nature and character of the materials used in building, as a means of giving reality to architecture. Quite true, but we think that there is something more behind than that, to make modern architecture a reality; and also we feel rather a doubt as to the meaning of some of Professor Pite's arguments. He says:—

> "The study of materials is primary to the architect, then the study of construction and purpose, followed by such æsthetic considerations as have not been evolved in their progress through an artistic mind."

How did that "not" get in there? Where are the æsthetic considerations to come from if they have not been evolved by an artistic mind? We almost thought that "not" was a printer's error, but the remainder of the sentence seems to imply that it was intentional:—

> "The impressiveness which is architectural, in the Temple of the Sphinx, has its main sources in these three primary streams; they here combine in a building that owes nothing to what is commonly regarded as architectural detail or to æsthetic considerations. Dignity, fitness, and security are expressed alike by the material, construction, and arrangement."

Considering that the Temple of the Sphinx (which, by the way, in spite of its proximity, has nothing to do with the Sphinx) is merely a row of square stone uprights supporting a roof of stone lintels, and has beyond that no architectural expression at all, we presume the "not" was after all intentional; but we fail to see where any æsthetic comes into it at all, except in the fact that the pillars are in a continuous row and equally spaced, which is almost a necessity for convenience of construction. It is not so much architecture, as building reduced to its most primitive elements, and illustrates only the two first of the qualities named in the quotation, the third (that of æsthetic) being absent. This primitive interior may, it is true, be regarded as the germ of the halls with their massive and closely packed columns, which gave such mysterious grandeur to the temples of the great Egyptian age. But if these latter had contained nothing but the crude square columns of the Temple of the Sphinx, instead of the two orders of cylindrical columns with their carefully profiled and contrasted capitals, would they have been so impressive? Assuredly not; and that is where the æsthetic element comes in.

Although the doctrine of giving primary attention to construction and the character of material is a most wholesome one, there is, as we have suggested, something more required behind that, to give reality to modern architecture. What is needed is the personal interest of the architect in the endeavour to make a building the best and most natural expression, in plan and section, of the purpose for which it is intended, in place of merely making it what will be accepted as such according to present prevalent taste. There is too little of that direct attempt to express an architectural problem as its conditions imply, too much of merely doing what is expected according to habitual standards. Architectural competitions have an unfortunate influence in this respect. An architect once showed us some sketches for a building which was to be competed for, showing a most original and effective treatment of plan and design, which amounted to a new architectural idea, without involving any inconvenience in practical working. "But," he said, "I shall not work out that idea for the competition; it would be useless. Competitions are always won by designs that keep the beaten track." Anyone who has paid much attention to the results of competitions must recognise the truth of that. They are always decided in favour of what may be called (and are no doubt considered) "safe" designs; anything out of the beaten track is liable to be passed over as an eccentricity. We see the same kind of influence, in a slightly different manner, in the architecture of "Garden Cities." Custom has settled that garden cities are to be "picturesque," and that the picturesque means high roofs and small windows, and prizes are awarded accordingly; to the best plans which also include the required elements of the "picturesque," though the upper rooms may be cut up most inconveniently by the vagaries of the roofs. A design which merely sought to get the best result independently of the factitious picturesque would not have a chance; and so the whole thing becomes an unreality.

The hurry in which many classes of building are now required to be designed and built is another condition most inimical to anything like genuine architecture. In America, as we were told not long ago by an American architect, this condition of hurry has risen to an almost impossible climax. Drawings for a large building are wanted in a week, and if the architect is not ready to supply them he is told that someone else will. Under such circumstances nothing is possible but to mechanically apply a series of ready-made architectural features, or (which might be better) to build plain walls; but that alternative the client will not allow; he must have the usual "handsome building." In England we have not come to quite such a rush as this, but still the demand for a building in the shortest possible time is becoming more and more insistent, and leads to an acceptance of architectural commonplaces because there is no time to evolve anything else. In the case of theatres, which might furnish so much opportunity for fine architecture, any such thing has become an impossibility. There is not a theatre in London worth looking at as architecture; all that is required is that it should have the usual conventional architectural features, and should be ready to open by the advertised day. Commercialism rules everything; and commercialism is fatal to architecture.

The great desideratum is that the public should learn to care about and really want good architecture. In the meantime, architects who are fortunate enough to be given time to consider and mature an architectural scheme should endeavour to begin by considering what is the arrangement of plan and section which most fully expresses the purpose of the building, and display it with the architectural detail which really interests themselves, which they design because they enjoy it, and not merely because it is what is usual and is expected. In that way we should have more of reality in our modern architecture.

A By-Law Farce.

HARDSHIPS under by-laws are unfortunately so numerous as rather to deaden one's sense of the enormity of any specific instance. If, however, the *ex parte* statement of a recent victim is to be trusted, his case seems to stand out from the rut of ordinary specimens of this kind of injustice. He was charged with omitting to send in plans. It seems that at the beginning of the year, the local builders and architects are supplied with the dates on which the Plans Committee meets, and it is intimated that plans must be submitted seven days before each date of meeting. In the district in question there was apparently no meeting between July 3rd and September 4th. In such circumsta it is obvious that during July and August no building can be started in that district, unless the local authority prepared to atone for their protracted period of repose putting a liberal construction on their by-law. On July the builder sent in notice that he was about to commence bu ing. The footings were commenced, and the first brick laid on July 24th. On September 5th the Committee and ordered prosecution of the builder for omitting to plans "which" (so states the builder) "had been lying in t office not seven days only, but five long weeks save one da He was convicted by the magistrates; and although he been in business thirty years, he had never before charged with any breach of the by-laws. Assuming that statement is correct, and that he was really convicted u this plain issue, one hardly knows which body to admire profoundly and with the most reverent awe—the Comm who ordered the prosecution of a man for not doing wha had admittedly done, or the magistrates who capped absurdity by convicting him of this imaginary offence. would be a relief to learn that both bodies could produce explanation that would absolve them from the ser responsibility of rendering the law contemptible and ridicu by too close an adherence to the letter that killeth.

"Cheap" Churches.

HARASSED bishops and clergy, we are told in a pamp that has just been issued, price 3d. net, by the corporated Church Building Society, of 7, De Yard, Westminster Abbey, "called upon to carry thr church-building schemes amidst many other pressing du and often indifferently equipped with technical knowledg the subject, are sometimes tempted to acquiesce in sch which are offered to attract by one special inducement—ch ness." Deliverance from this temptation is the object o pamphlet, which contains extracts from writings or spee by Sir Aston Webb, Sir C. A. Nicholson, Mr. W. D. C Mr. Charles S. Spooner, Mr. G. H. Fellowes-Prynne, Edward Warren, and the late W. M. Fawcett. Mr. Ca observations were noticed at some length in this journal o occasion of their first publication. He holds that chea in building involves with unerring certainty dearness of keep; cheap building being invariably bad building, cheapness and vulgarity seem to run in harness. He in on the essential difference between cheapness and econ and advocates the securing of architectural effect by si lines and good proportions rather than by elaboration of de His final word is that "cheapness is the reverse of econ and the negation of good taste and sound sense." Mr. Sp insists that an absolutely plain church, without mouldi carving, may be a very noble building, if it is well built. who entered it were tremendously impressed by Bentley's church at Westminster when it was first opened; yet it nothing but a great brick hall with concrete domes over no ornament except a painted rood hanging over the sanct The whole impressive effect was produced by fine propo and good spacing. . . If an architect cannot produce a effect by means of proportion and mass, the most glo material in the world will not enable him to do so—n think it would probably hamper him; he would be tempt show it off, and to try to hide his incapacity behind its qualities." His conclusion is that "a competent architec build a good church, even when the severest econom necessary, provided it be well and solidly built; but no a tect, however gifted he may be, can build a good c church." Sir Aston Webb is very graphic: "We all the suburbs of the metropolis and other large towns, with eternal rows of hopeless dwellings, and the new church s times hardly distinguishable from these houses; the same and skimpy appearance, the mean approach, the cheap ca

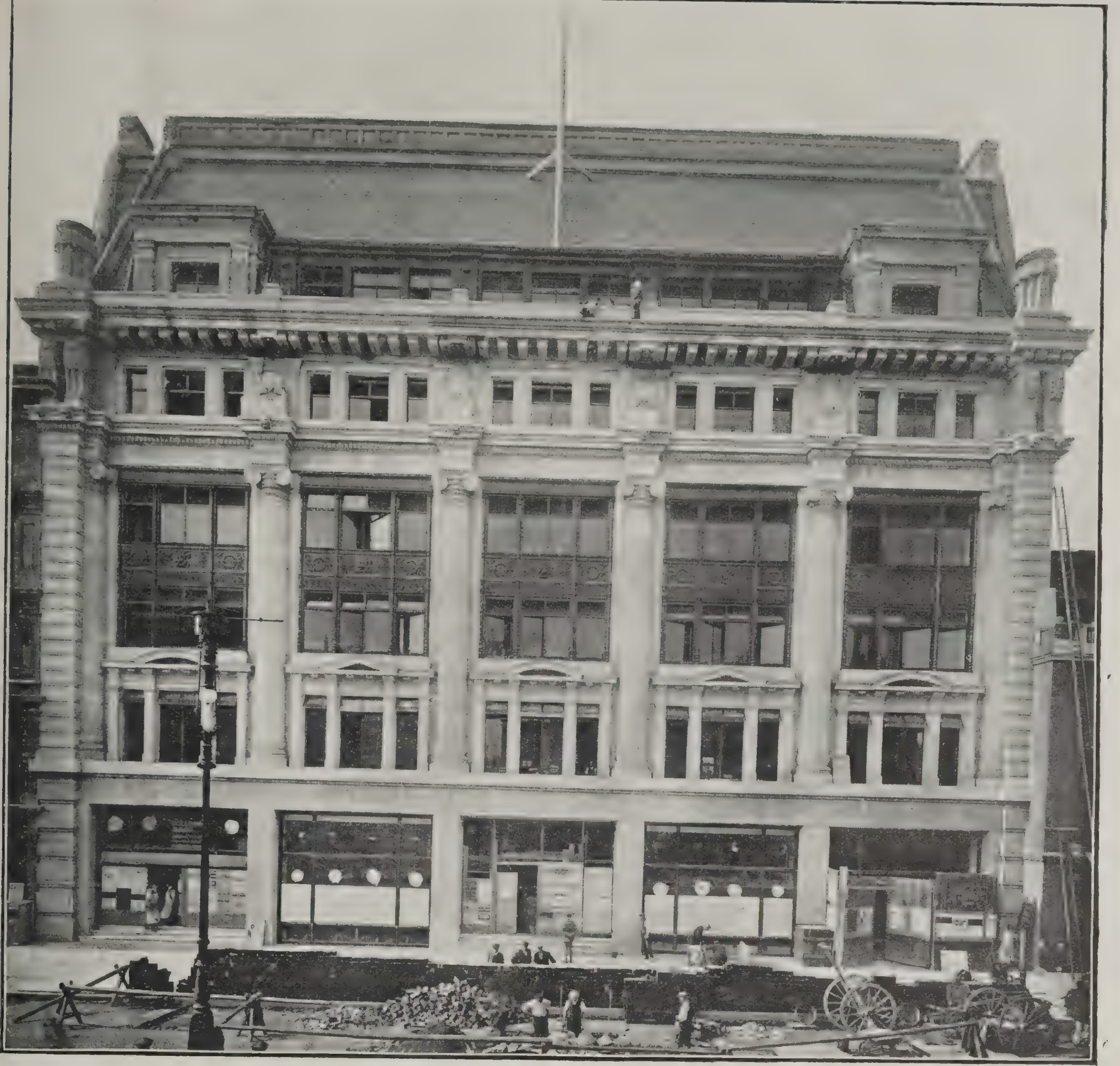


Photo: "Topical Press."

THE NEW BUILDING FOR THE REGENT STREET POLYTECHNIC, LONDON.

FRANK T. VERITY F.R.I.B.A., ARCHITECT.

al glazing, and the skinny bell-cot or impoverished turret; al we feel that there can be little more permanence in this scalled permanent church than in the temporary iron structte it has replaced. What a heritage of periodical and costly rairs these cheap churches are laying up for the Church in tl time to come!" Mr. Fellowes Prynne deprecates "the nt, cheap, and complete church, which rarely rises above tl most commonplace in design," and asserts the influence of " church designed and gradually carried out on bolder lines -ofty, spacious, massive, and dignified, whose greatest merit wld be that it was noble and uplifting in its proportions and dotional in character, and that, raising her roofs and gable cisses far above its squalid surroundings, would be looked un as a beacon of Christian faith and stability." In the semes submitted to the Society's Committee, Mr. Edward Wrren often sees "evidence of a misguided desire to smarten, tockneyfy, or—if I may use the expression—to 'suburbanis' the old grey churches of our quiet countrysides, by the rless application of smart and imitative workmanship, in clap materials," etc. Mr. Warren has a delightful piece of irctive in which occurs the appealing form of words "reachm down reredoses." Sir C. A. Nicholson speaks of the harm tl comes of trying "to build showily as well as cheaply, when th starve the roof-tree so that they may gild the altar." He puts the whole case in a sentence in the injunction: "If we cannot afford to build handsomely, then at any rate let us build simply and modestly." Almost without exception, the architects contributing to this interesting pamphlet exhibit a nice knack of pithy expression which occasionally rises to epigram, giving point, emphasis, and freshness to a subject that might easily lend itself to dulness and insipidity.

The New Polytechnic Building in Regent Street.

THE new Polytechnic building, which has just been completed from the design of Mr. Frank T. Verity, F.R.I.B.A., closely resembles the large business premises which have been erected lower down in Regent Street by the same architect. Indeed, this design has been approved for the reconstruction of a large section of the western side of this thoroughfare, and ultimately Nash's scheme is likely to be entirely superseded.

The Polytechnic building occupies two-and-a-half acres of floor space, and is said to have cost £90,000 to build. When the governing body of the institution decided upon this scheme of reconstruction, a sum of £50,000 was placed at their disposal as a memorial to King Edward, and several other large contributions have since been received.

The British Museum New Wing.

THE shell of the supplementary buildings at the rear of the British Museum, which are to be known as the King Edward VII. Galleries, has now been divested of the scaffolding which had been in position for several years. Though the exterior building is completed and the four floors have been laid down, the internal finishings and decorations will require another year's work. The new wing is to be used largely for the storage of books and prints, but the ground floor will hold the many exhibits of ceramic art which are now located in various parts of the British Museum. There will also be students' rooms, and offices connected with the administration will account for the remainder of the edifice that will not be open to the public. The King Edward Galleries have naturally been designed to harmonise with the mother structure. The new building presents a façade of twenty-one Ionic columns similar to that of the Great Russell Street entrance, rising 14ft. above the roadway on a simple base which runs across the entire frontage of the building, namely, a length of 400 ft. At each end of the façade rises a tower, or pylon, 90 ft. high, ornamented with statuary work by Sir George Frampton, who also carved the statues of Art and Science which adorn the main entrance in Montagu Place, before which a spacious forecourt is to be laid out. The new thoroughfare on which the galleries look is to be known as British Museum Avenue. It was in 1896 that negotiations were opened for the purchase from the Duke of Bedford of a site for the new extension, and the property changed hands for £200,000, a sum far below its market value. The cost of the present structure has been variously estimated at from £150,000 to £220,000. The architect is Mr. J. J. Burnet, of London and Glasgow. It may be recalled that the "national collection" was first accommodated in old Montagu House, which disappeared in 1845, by which time much of the present structure had, wing by wing, taken its place. Of the then new structure, Sir Robert Smirke was the architect. It was Sir Antonio Panizzi, the autocratic director of the Museum, who suggested the plan of filling with a circular library the inner quadrangle of the Museum, and, under the supervision of Sydney Smirke, the work was completed in three years, in 1857, at a cost of £150,000. The dome is 140 ft. in diameter, and 106ft. high.

University Courses in Heating and Ventilation.

IT is strange to think that this country, while the earliest in industrial expansion, lags behind in industrial and technical education. The first to exploit the natural forces that make for power and speed, we are almost the last to co-ordinate and economise them. We work wastefully because ignorantly. Sir William Ramsay reminded us of that the other day, when he made the alarmist estimate that at the present rate of consumption England will in 175 years be destitute of fuel. The statement, whether or not it be in any degree exaggerated—and Professor Stanley Jevons made substantially the same estimate a generation ago—certainly lends point to the national necessity for adopting every possible means for the economy and conservation of energy. The nation's waste of its coal supply is simply outrageous; and one direction in which this extravagance is plainly demonstrable is in the very primitive means so generally adopted for the heating of buildings. Now for the first time this important subject is being recognised as suitable for inclusion among the curricula of the Faculty of Engineering of University College, London. For several years past, the Institution of Heating and Ventilating Engineers has been advocating the more systematic study of heating and ventilating, and at length the educational authorities have paid heed to its representations. The London County Council, which we understand to have made a special grant for this purpose to the College, had previously founded a course of lectures in Westminster Technical Institute, and these seem to have yielded excellent results, in spite of their necessarily elementary character and of the restricted opportunities as to time and equipment. At University College the subject will be approached with high seriousness. Theory and practice, travel and research, will yield the best definite scientific instruction. The well-ordered and closely concentrated attention to data must result in improved practice and may prepare the way for, even if it does not actually produce, important new discoveries of means and improved efficiency of service. Although the syllabus rather tends to create an impression that ventilation is at all events not likely to receive more than its fair share of attention, the vital importance of this subject, and the many interesting problems in it which still await solution, will surely preserve it from undue neglect.

The Neo-Post-Impressionists in the Borough Road.

IN the Common Room of the Borough Road Polytechnic, Post-Impressionism, it seems, has found an English expression at the hands of a group of young artists gathered around Mr. Roger Fry. Here are to be seen sever large wall-paintings executed on calico in bright colours and flat designs by a process invented by Mr. Fry, and, if we may accept the estimate of them given by a facetious writer, Mr. Robert Ross, in the "Morning Post" (a newspaper with a reputation for good art criticism), these paintings are certainly out of the ordinary. The writer says that to the parrot invocation of "Dame Nature," Mr. Fry retorts with a "Damn Nature." The artist must paint what he feels and how he feels: not what he thinks he sees himself or thinks other people see. "In the barbaric decorations of the Byzantines Mr. Fry finds a precedent for his new modern emotional school. In the frozen geometric symbols of the Byzantines he would seek a refuge from the tyranny of chiaroscuro and those stereotyped receipts for illusions and actuality which four hundred years and more have sanctified. As Monet decomposed the atmosphere and laid out its component colours on canvas, so Mr. Fry and his friends would decompose anatomy. With their attempts to get away from realism we are wholly in sympathy, but not with the deliberate sacrifice of physical beauty in face or form, one of the heirlooms of Greece and the talisman of the Middle Ages."

The design immediately over the entrance is from the pencil of Mr. F. Etchells, and indicates the emotions provoked by Hampstead Heath on a Bank Holiday and the mind of the artist. Everything, says Mr. Ross, is conceived in one dimension. Perspective and pictorial illusion have been dropped with the "aitches." There is an undeniable feeling of vitality in this monstrous production, notably in the group of three costers and their young female friends on the immediate right of the door. These figures are, however, a parody of Egyptian pictographs. No. 2, "A Punch and Judy Show," is by Mr. Max Gill. . . . Not in name only has the artist certain affinities with a distinguished namesake. Some of Mr. Beerbohm's naughtiness has been pressed into the service of the Polytechnic. Mr. Gill has been unable to retain his gravity, and this design betrays emotions provoked possibly by the designs of his colleagues as well as the egregious tragedy of Mr. Punch. . . . No. 3 is certainly the most interesting of the seven designs. It is far the most serious, and no one can fail to detect the hand of a serious artist who has chosen to go to a fancy dress ball as a Primitive, not as a joke, but as a demonstration. Mr. Duncan Grant will one day be heard of beyond the walls of the Boroug Polytechnic. Perhaps he is the Millais of the New Pre-Raphaelites, so far as technical accomplishment counts. Hi picture or design is called "Bathing in the Serpentine." I might be recognised for "Washing Greek Vases of the Sixth Century B.C. in the Illissos"; though County Council regulations have in most cases been respected, and Matthew Arnold's reflection on that stream is in some ways vitiated.

No. 7 is also by Mr. Grant, but it was not finished when
present writer was privileged to inspect the other frescoes.
-Impressionist Football can be more easily imagined than
ribed. But here again Mr. Duncan Grant cannot conceal
ower for representing movement and his obvious pleasure
ercising it when Mr. Fry is not looking. No. 4, "Pad-
," by Mr. Albert Rothenstein, the most obviously accom-
ed of all the Amusements, will probably prove the most
lar, for it conforms, as none of the others do, to the
itiated idea of wall decoration. There is a pictorial
ability about these little girls and their environment,
gh no one must attempt to indentify the particular spot in
e Park. . . . . . No. 5, "The Zoo," appears a
ily chosen subject for the Master of the menagerie, Mr.
r Fry. This design occupies the space of a door leading
the refreshment-room. An elephant, adroitly composed
the lintel, hesitates to accept a post-impressionist bun
a little girl, no doubt a student from the Borough Poly-
ic. Above her towers a giraffe, who looks with some
at the bun; beneath his legs may be seen a tortoise.
ther these are hieroglyphic cattle, as Walpole would have
we do not know. Mr. Fry has condescended to make
nimals recognisable mammalia or reptiles, and compared
e little girl and the bun or the people on the elephant's
they are positive Landseers. He might even be accused
mpromising with reality or representation. You wonder
serious he was with a picture which is very like the
ed cloths outside the booths of a travelling circus. Surely
ave the learned critic here in motley joking himself, not
ause he so sincerely and eloquently advocates. In No. 6,
ing Boats," by Mr. B. Adeny, there is more of M.
sse and the poisoned treacle stolen from France. It
ys, however, neither the talent of the English nor the
ur of the French post-impressionists. . . .

Designs for a State Capitol, Olympia, Washington.

(See Centre Plate and pages 350 *and* 351.*)*

HE awards of the assessors in the recent competition for
a State Capitol at Olympia, Washington, have just
been announced. This is probably the most important
etition that has been held in America within recent years.
uilding is to cost $5,000,000 (about £1,040,000). The
by Messrs. Wilder and White, of New York, was
first, this award carrying no actual money premium,
nveying the commission to supervise the construction of
uilding from the selected design. The second prize
0.00) was awarded to Messrs. Howells and Stokes, of
York; the third ($750.00) to Mr. David J. Myers, of
e; the fourth ($600.00) to Messrs. Wilcox and Sayward,
attle; and the fifth ($500.00) to Mr. Ernest Flagg, of
York. The following architects received honourable
n: Mr. Gilbert Lounsborough, San Francisco; Mr.
Lichtenstein, San Francisco; Mr. W. Marbury Somer-
Seattle; Mr. Wm. Macomber, Seattle; and Messrs.
and Ewald, St. Louis. Messrs. Olmsted Bros., of
ine, have been employed as landscape architects.

reproduce as the centre plate to the present issue the
ons of the first and second schemes, and we give also
oth of the buildings and the surrounding lay-out. From
gulations governing the competition we extract some
lars, which will assist in a fair estimate of the designs.

the group plans a carefully studied general scheme only
pected. This could be presented in (a) a plan which
t comprise more than the site and its closely adjoining
y and which was to show buildings in block plan only,
to say, without any internal division; (b) one elevation
rom any standpoint; and (c) one section taken through
up. Plan, elevation and section at a scale of sixty-four

xis developed through the centre of the building north
th was to be the main or principal axis in the grouping plan. The main façade of the Capitol building, it may be stated, faces the north. The Governor's Mansion, competitors were to understand, need not necessarily be considered as permanently located, nor was it to be allowed to interfere with any general scheme which a competitor desired to submit.

It was presumed that the main approaches to the Capitol building and grounds would be from the north and east. The act required that architects competing should submit ground plans for a series or group of buildings, showing the main building or Capitol, a court building or Temple of Justice, and at least two other buildings for general offices.

A suggestion was offered that the gulch situated at the north-east corner of the plateau might eventually become the site of a stadium with seating capacity of from ten to twelve thousand people.

Adequate provision for roadways and other thoroughfares was to be indicated, both for vehicular traffic and pedestrians, and the best gradients were to be suggested from the upper to the lower levels looking towards a boulevard surrounding Capitol Place along Budd's Inlet.

It was suggested that architects submitting designs for the Temple of Justice should consider the building as set on a level plateau. The building was to be planned so as to provide adequate quarters for the Supreme Court and its officers and offices for the Attorney-General and the State Law Library. It was desirable that the building should be designed with reference to the Capitol building, which should be considered as the dominant feature. The building was to be of fireproof construction throughout—the exterior to be of such material as the competitor deemed best and most satisfactory for the execution of his design. Inasmuch as the exterior of the Capitol building would probably be of stone, it was suggested that this would be an appropriate material for the exterior of the proposed building. It was also suggested that the conditions specified might possibly be obtained in a two-storey and basement building. Due allowance was to be made throughout the building for lobbies, corridors, halls, elevators, etc., in addition to the other requirements set forth.

The steam for the heating and ventilating apparatus, and also the electricity required for power and lighting, etc., will eventually be generated in a station outside. The system was to be designed with this in view. Adequate provision, however, had to be made for heating boilers, dynamos, chimney, etc., to accommodate the needs of the building.

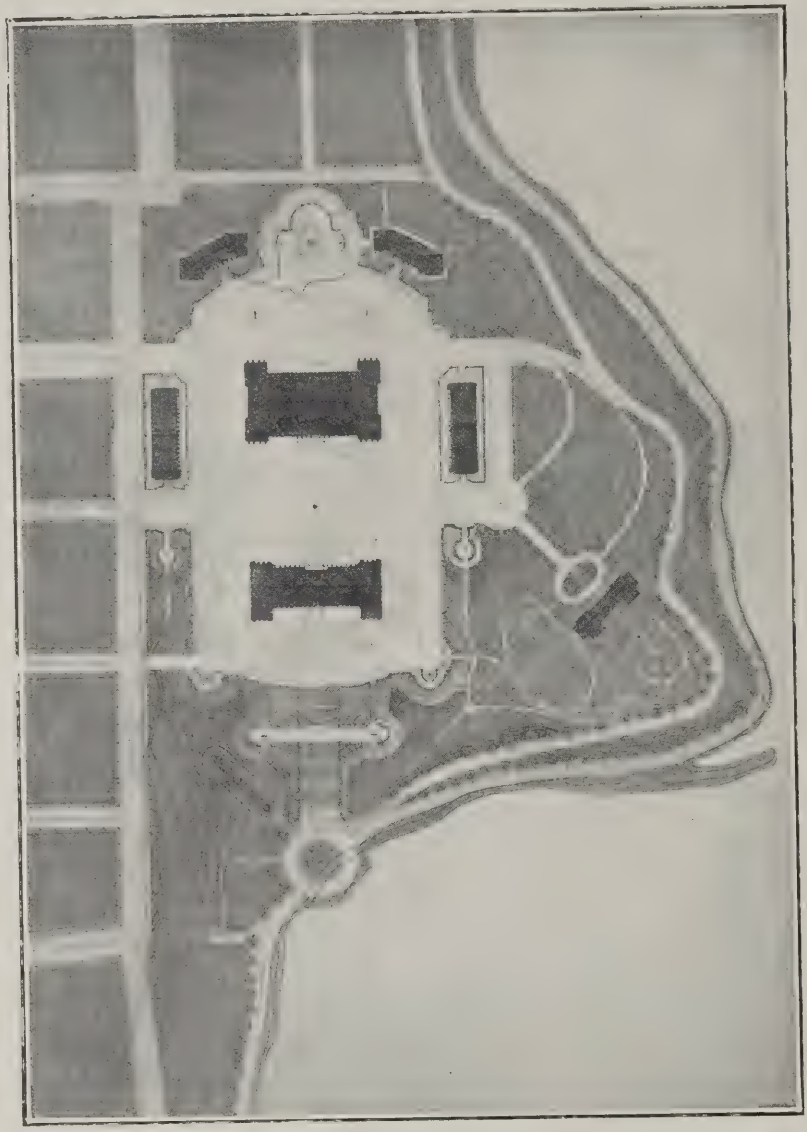
It was also suggested that the building might be connected with the Capitol building by a tunnel between the buildings, and the basement planned with reference thereto.

For the illustrations and particulars which we are able to give of this important competition, we are indebted to the "American Architect," New York.

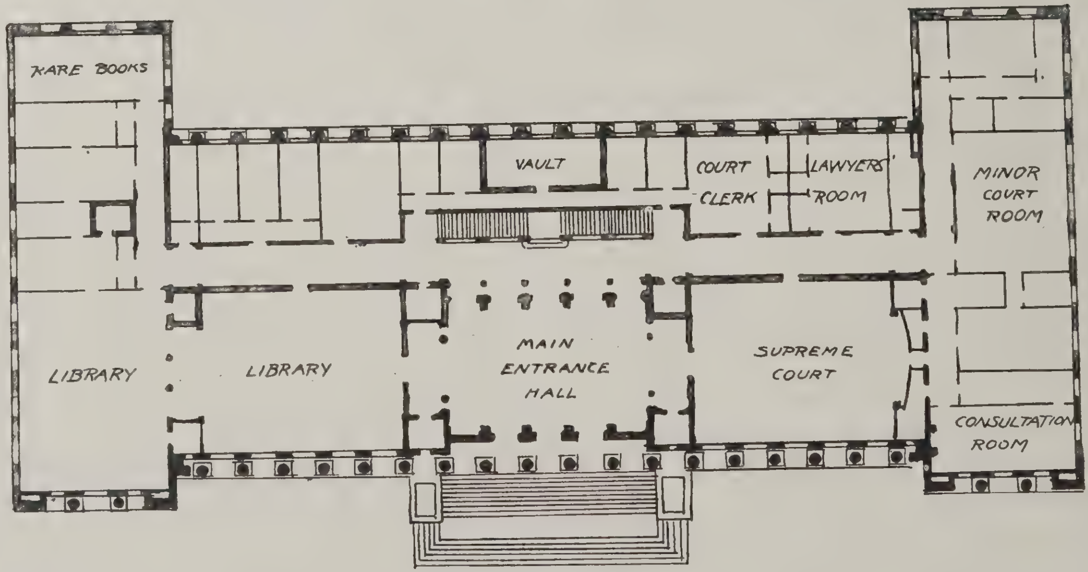
A New "Domestic Architecture" Issue: Special Notice.

THE special issues dealing with domestic architecture published by the *Architectural Review* in 1908, 1909, and 1910 having been received with so much favour, the proprietors have decided to publish another issue this year. The volume is now in course of preparation, under the direction of Mr. Mervyn E. Macartney, B.A., F.S.A., F.R.I.B.A., who will be pleased to consider photographs of any recent work suitable for inclusion in the volume. He will also be glad to hear of any new houses of particular interest with which the reader may perhaps be familiar. All communications should be addressed to the Editor of the *Architectural Review*. Caxton House, Westminster, S.W.

To those who are acquainted with the special issues already published, it is unnecessary to state that the high standard therein set up will be carefully maintained, and that only really good work will be illustrated. Photographs, plans, and a very brief description should be sent in each instance.

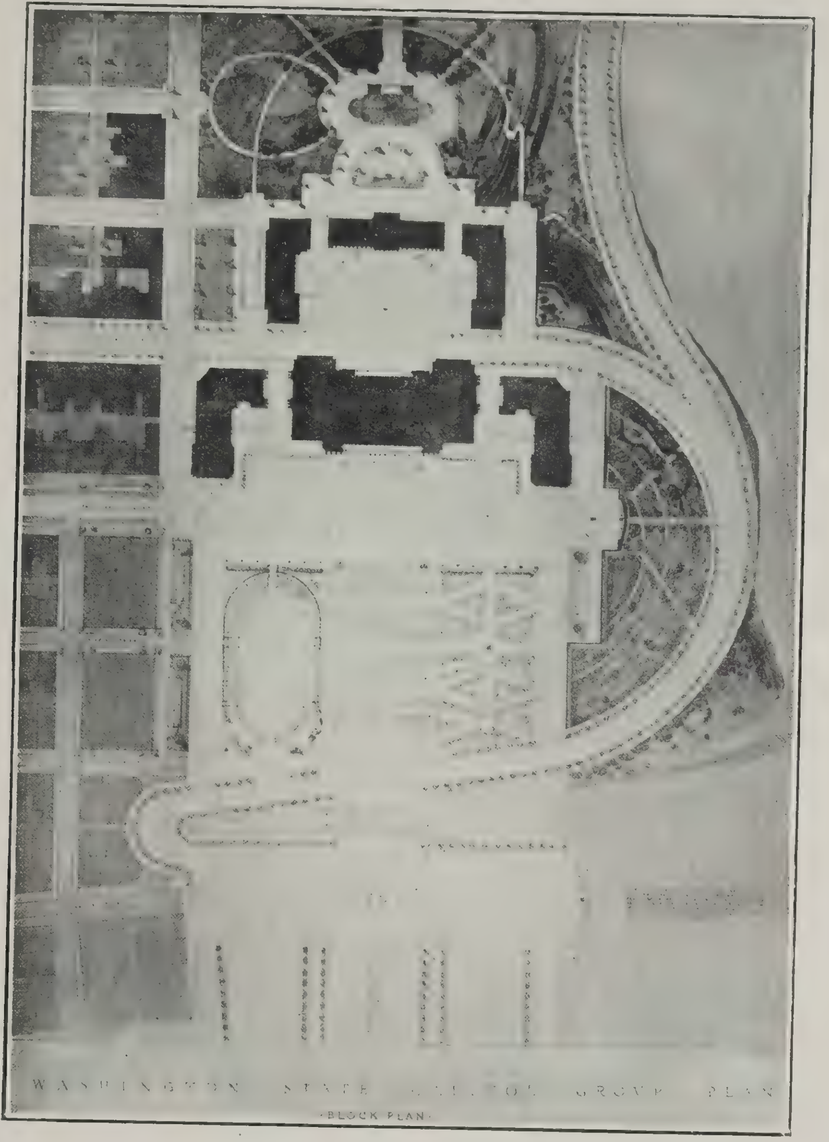


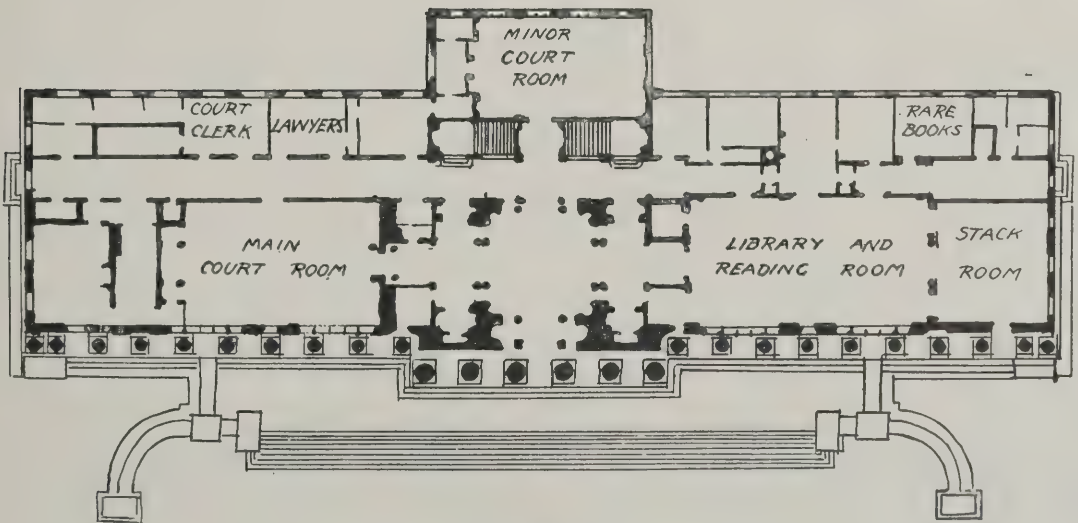
Block Plan.



Ground Floor Plan.

WASHINGTON STATE CAPITOL COMPETITION: SELECTED DESIGN.
WILDER AND WHITE, ARCHITECTS.





Ground Floor Plan.

WASHINGTON STATE CAPITOL COMPETITION: DESIGN PLACED SECOND.
HOWELLS AND STOKES, ARCHITECTS.

THE ARCHITECTURE OF STAMFORD.

STAMFORD is a town of immense interest to the architect, possessing, as it does, such a collection of buildings of all periods. It bears few signs of decay, and, though a comparatively small place, is the centre of a large agricultural trade.

In the early and middle ages it owed much to its situation, which is described and summed up in the name. Fords are everywhere older than bridges—Oxford, for instance, is older than Cambridge. In Lincolnshire, Stamford denoted the place where the great highway, the Erwing Road, crossed the Welland. There are indications that the ford was not always on the same spot. For this reason we find relics of Roman passages not at what is now Stamford, but at a considerable distance higher up the stream in Burghley Park, where, no doubt, the stone ford was found two thousand years ago, and was recognised as the best way over. There are at least fifteen Stamfords and Stanfords in England. Some of the best specimens of all periods of English architecture are to be seen in the Stamford with which we are now concerned, which contains an unbroken series of buildings.

In every view of Stamford the towers of the three older churches are a prominent feature. Coventry, and, of course, Oxford, excel the Lincolnshire town in this respect; but for delicate proportion, the tower and spire of St. Mary's are unrivalled.

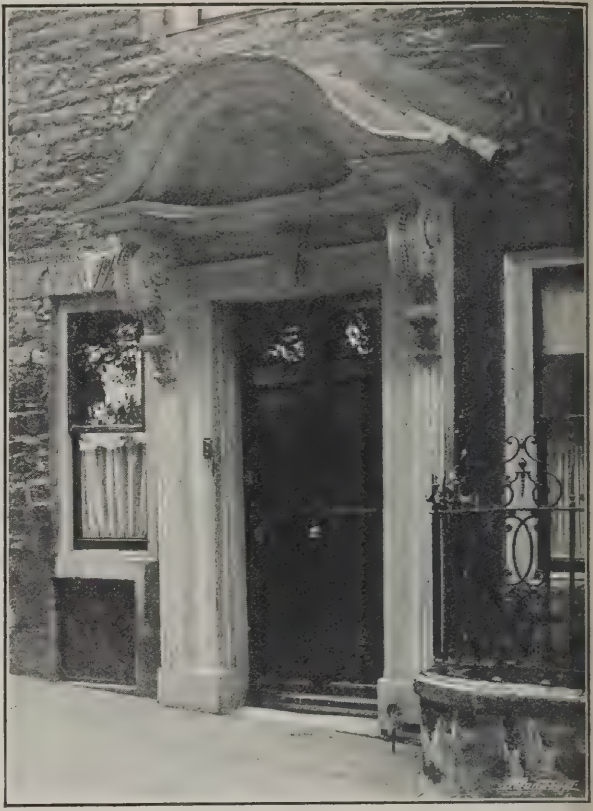
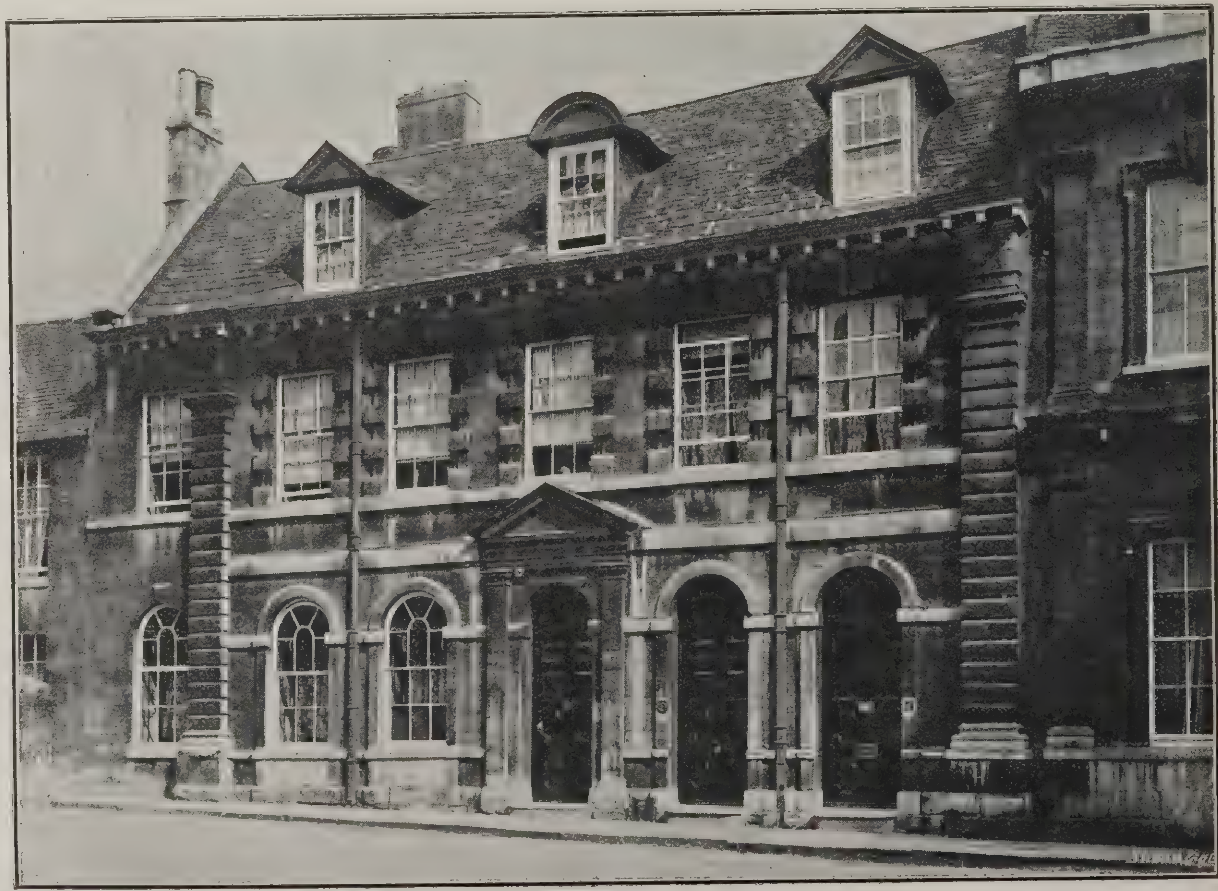


Photo: E. Gunn.

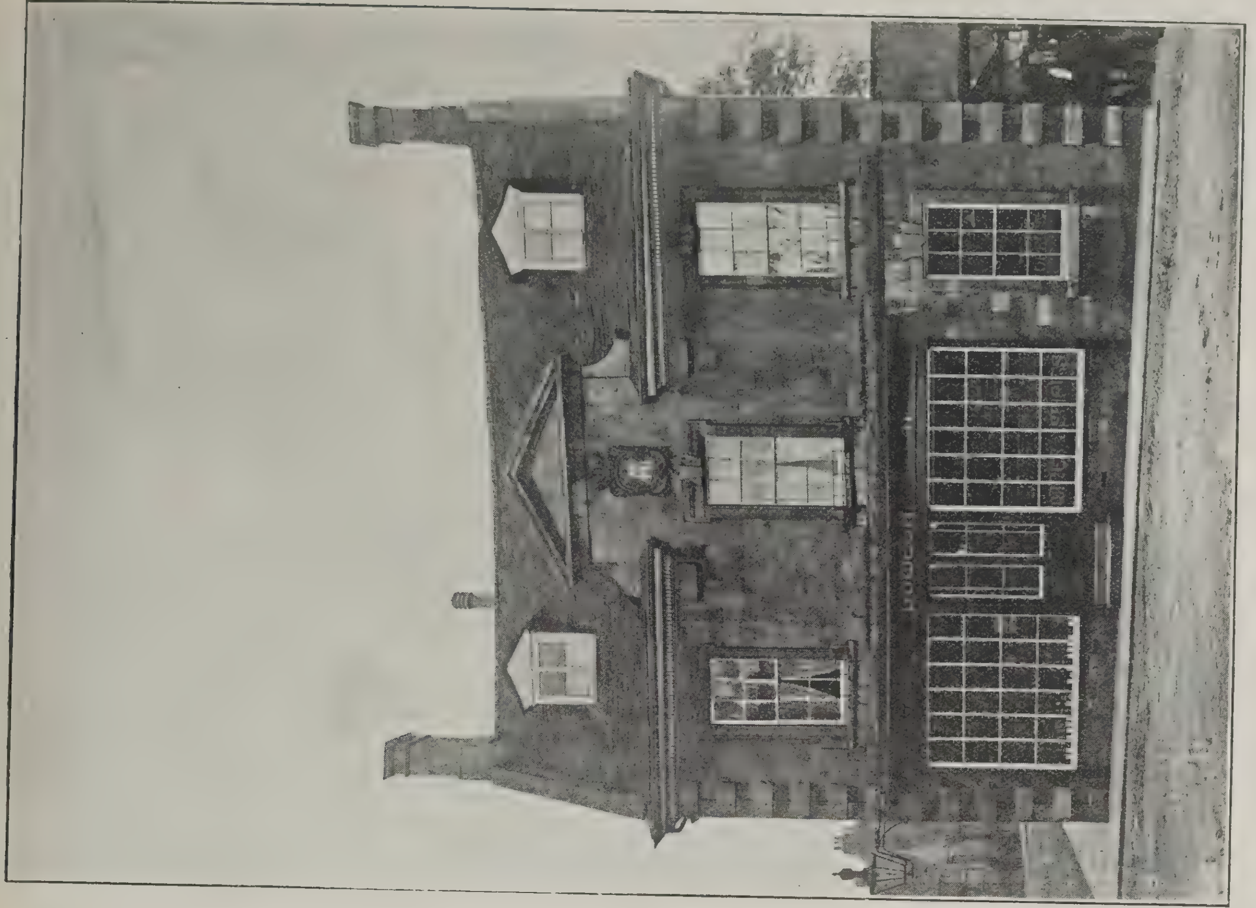
DOORWAY, BARN HILL, STAMFORD.

Next in importance to the churches are the bedehouses, almshouses, or, as they are locally called, "callises." There are eight of these institutions, and they are said to be so termed from the fact that they were founded by the wool exporters of Calais. This seems but a lame explanation, though there appears to be no better. These buildings have been so repeatedly rebuilt and restored that, in the greater part, nothing of interest remains. The domestic architecture of Stamford, however, is of great interest. Nearly all the houses are of stone, brick and half-timber being quite uncommon. From the days of the Normans downwards, the stone which, as it were, grew under their feet, was used to build the dwelling-hous the churches, the "callises," the schools, and the inns of burghers of Stamford. Of these houses a large number main whole or in part, and may be seen and studied in ev street. Merely to give a chronological enumeration of specimens of old English architecture here to be found wo occupy more space than could be spared. In one street,



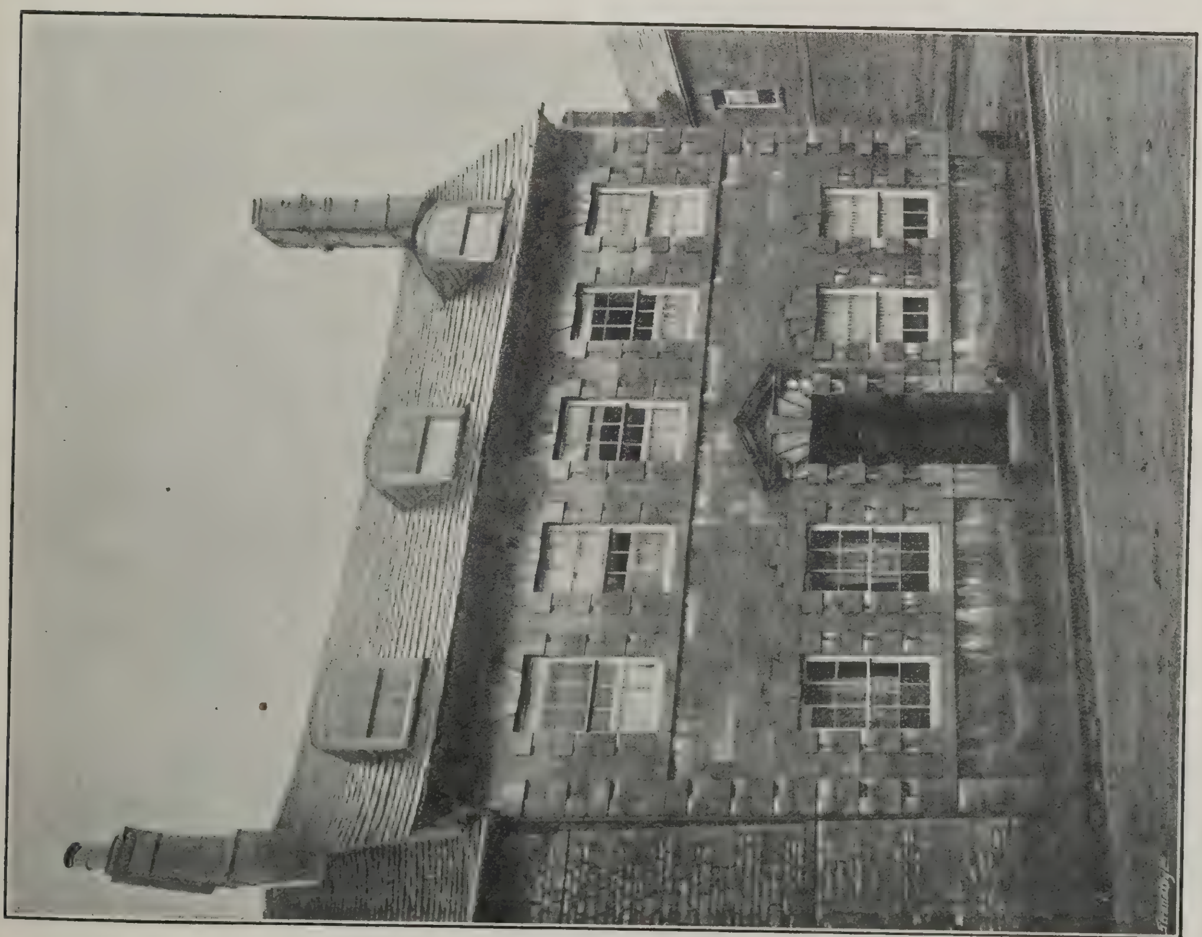
3, ST. MARY'S PLACE, STAMFORD

Photo.:] F. R. Taylor.



41. HIGH STREET, STAMFORD.

Photo: F. R. Taylor



35. ST. MARTIN'S, STAMFORD

Photo: Mrs. Nichols.

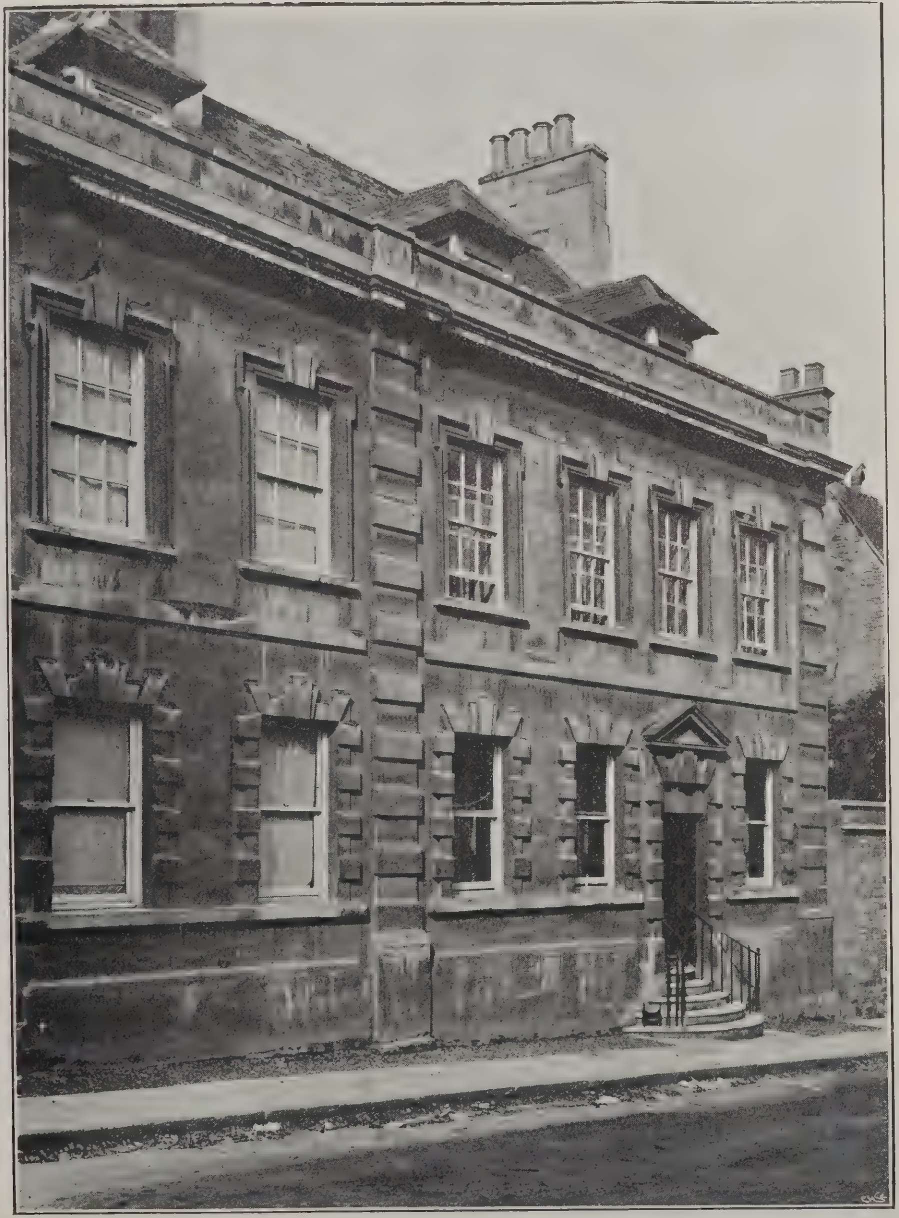


Photo: F. R. Taylor.

67, ST. MARTIN'S, STAMFORD.

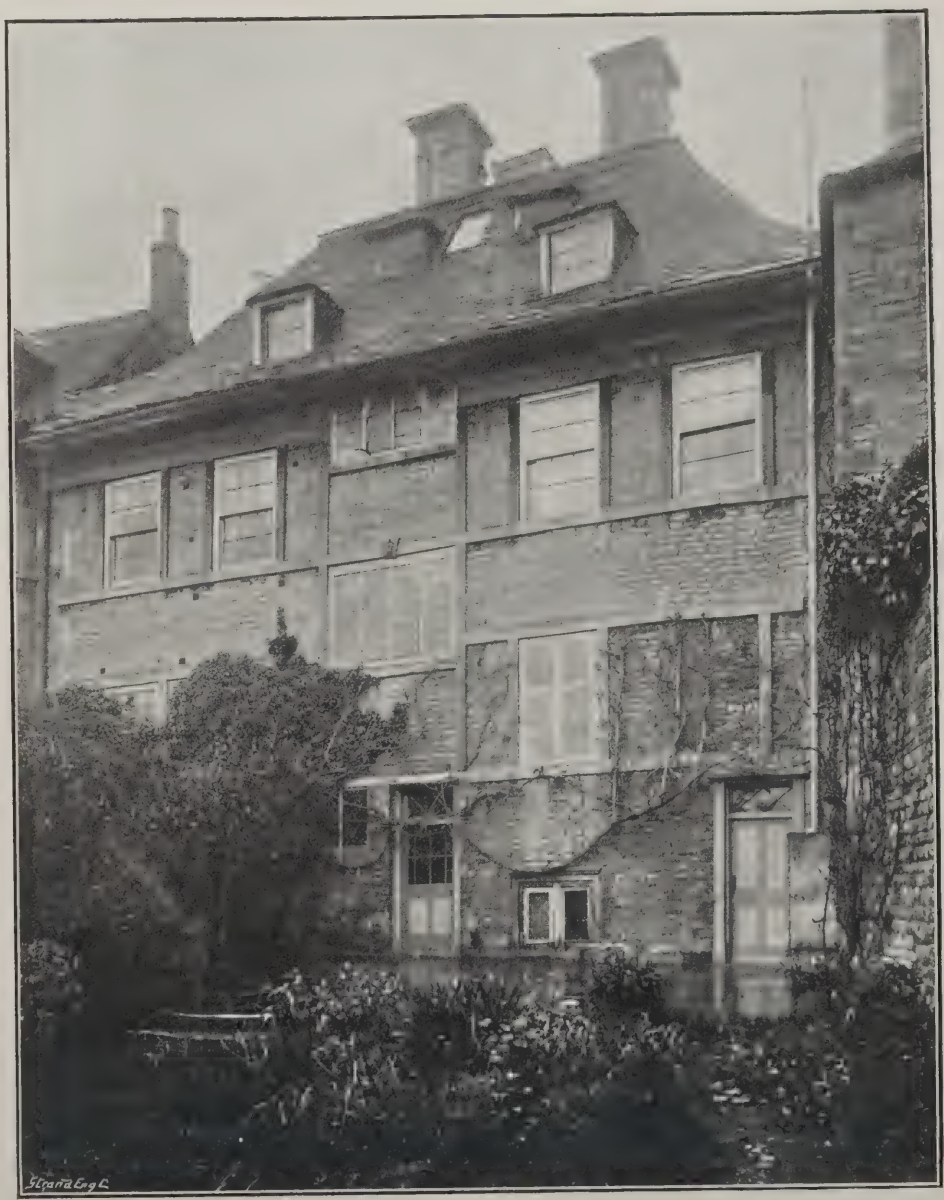


Photo: Mrs. Nichols'

BACK OF 19, ST. GEORGE'S SQUARE, STAMFORD.

stance (All Saints', with its continuation, St. Peter's), with- a distance of two hundred yards, the observant visitor will tice as many as half-a-dozen Gothic archways on one side or e other, and at least as many square-headed doorways of arly parallel antiquity. One or two are dated as early as mes I. Nor is this the only part of the town where such ics are of common occurrence. So profuse are the examples at it would be better to abandon the chronological method of scription, and to name, in topographical sequence, a few of principal features of the streets.

Nothing need be said of the town-hall, which, though con- nient, is ugly and hopelessly solid. Beginning a short walk Barn Hill, to the north of All Saints' Church, two or three y good houses will be noticed. One of them belonged to ukeley, an antiquary, who was also vicar of the church. In house here, which he altered, Wolph, an alderman, re- ved Charles I. for a night in 1646, during his flight from ford. One of the gates in the town hall close by is still inted out as that through which the unfortunate king passed er his last night of freedom. At Newark the next day he rendered to the Scottish army, and by them was sold to the undheads. Close by is a plain though pleasant house dated

o on the pipes. No. 3, All Saints' Place, is a good, ple piece of design which should not be missed. A little her south is the "Crown" Inn, which, in addition to its windows and deep eaves, preserves an old staircase and r relics in a singularly picturesque courtyard. Proceeding all Saints' again, the attention should be turned to what to be the roof and louvre of an old hall, situated over rge shop.

he houses and shops in both St. Mary's Street and St. y's Hill abound in vaults and other remains of old build- , some of them no doubt marking the sites of old colleges. er down, beyond the churchyard, a chapel and the old hall stood across the street near the bridge, and apparently her arch and chapel were on the Northamptonshire side of iver. Here is Lord Burghley's Hospital.

cross the Station Road the "George," with its ivied court- , is seen, and here there is an ancient staircase which should inly be visited. Having passed two Gothic fronts, some- severely restored, and having ascended the hill, a great variety of old and mostly picturesque shop-fronts are to be seen. On the right are two houses, the stone fronts of which were apparently designed by the author of some eight or ten other houses in different parts of Stamford. These have been atributed to Isaac Ware, and indeed they closely resemble some fronts assigned to him in London. Two more houses in the same or a similar style are met with higher up St. Martin's Street. Past St. Martin's Church is the bow-windowed "Red Bull," in which the Duke of Cumberland was entertained on his way home from Culloden. The houses on the left, near the summit of the hill, have the advantage of a fine view of Burghley Park; and they are all large and handsome structures, some boasting good architectural features.

The return journey to St. Mary's can be accomplished by various side streets and at least two bridges. One would lead from the Midland station, on the site of the Benedictine Nunnery of St. Michael, to the scanty remains of the castle where the marks of Cromwell's bullets are still pointed out. The other, a suspension bridge, would lead from near the great Northern station, in Water Street, up the hill to St. George's Square. Almost all the houses round the little church and churchyard of St. George are worthy of special attention, No. 19, in particular, being a most charming example; this, though undated, may be fairly accurately ascribed to the beginning of the reign of Queen Anne. A walk through St. Paul's Street, further east, reveals many interesting buildings, both in Gothic and Georgian architecture. When St. Paul's Church (now a school), Brasenose Gate, the Whitefriars Gate, and many gabled and mullioned fronts have been passed, the curious Norman chapel of St. Leonard is reached.

In Broad Street is situated a curious Tuscan-Doric building called the Portico, which is now put to the somewhat prosaic use of a fire-station. The large but unbeautiful Stamford Hotel was built in 1829 by "Bond of London," at enormous expense. In the neighbourhood, again, is St. Mary's, and here some old, simple fronts in what used to be called Monday's Market deserve attention. The views through Cheyne Lane, Maiden Lane, and some of the other narrow ways between High Street and the site of the ancient cheaps are picturesque in the extreme. Stamford, indeed, has a wealth of beautiful though unostentatious architecture.

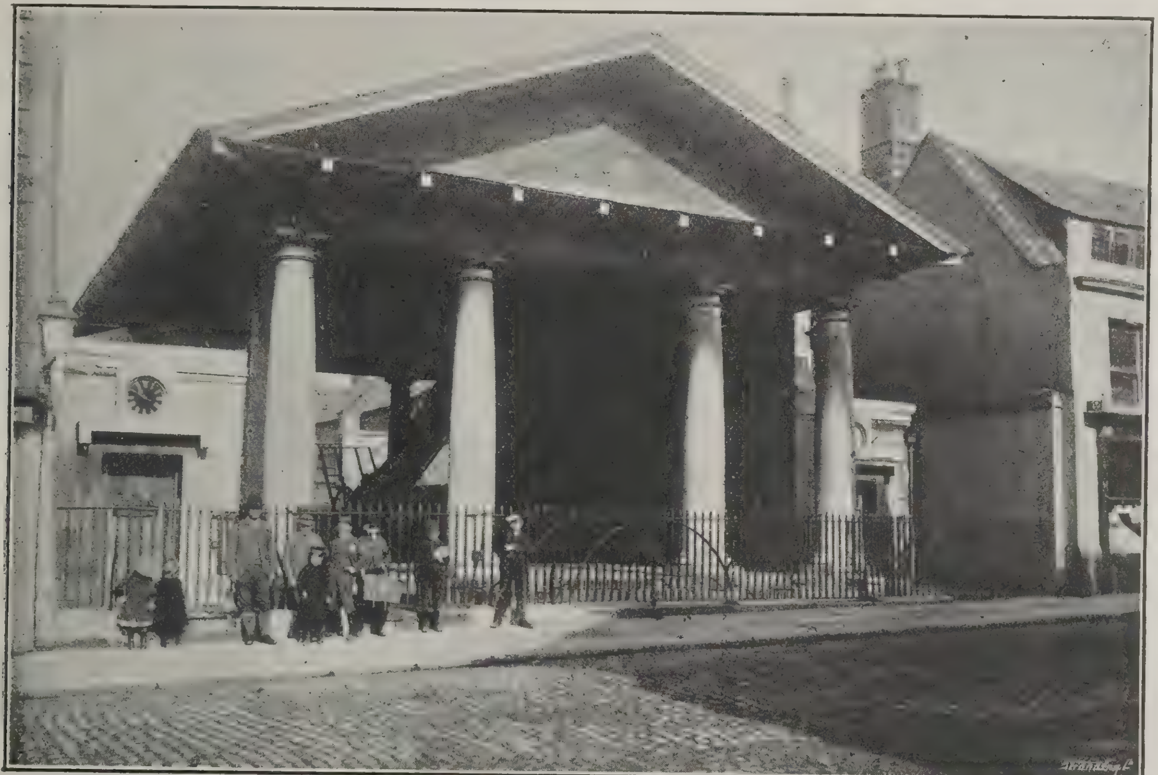


Photo: Mrs. Nichols.

"THE PORTICO" (NOW THE FIRE STATION), HIGH STREET, STAMFORD.

BUILDING CONSTRUCTION
AND
ARCHITECTURAL EDUCATION*

BY PROF. BERESFORD PITE, F.R.I.B.A.

The history of architecture is that of building construction, the means being involved in the consideration of the end attained. The two elements of architecture, the purport of the building, which involves the civilisation of the race, and the æsthetic ideal and traditions of the builders, both finding embodied expression in construction. A genuine architecture has neither of the two elements singly, as it cannot be without purpose or beauty; but it involves their combination, under the conditions of the science of building, and, despite the tendency of books of modern architectural history to concentrate attention on religious, civic, or domestic habit, or upon a commerce in traditional architectural forms, the building construction of man in different countries and ages is the field of the true study of architectural history.

The elements of architecture are not really capable of a practical dissociation, though possibly of separate analysis. It would be difficult in any historical review of buildings to eliminate architectural from non-architectural examples, and this is the problem of separating the study of architecture from that of construction. In different eras, and with races in varying measure the æsthetic or the constructive faculty has predominated. The great era of Grecian art stands for the former, as that of Roman ascendancy does for the latter; but to some extent both are always present, being interdependent, and they act and react as stimulants to the production of fresh architectural developments.

Many instances might be cited to illustrate the necessity of allowing that good building and good art are the same, a quality properly common to both, admirable construction having beauty in building as well as in other workmanships. Construction as an art in entablatures, domes, vaultings, arcades, roofs, staircases, and joinery offers abundant examples which do not permit the disintegration of artistic effect from constructive skill; both elements are practically in operation, and we can only describe the result as beautiful building construction.

Architecture as a constructive art offers a healthy sphere for a new enthusiasm. Ancient buildings will awaken it in those to whom the glamour of antiquity is golden, while others, to whom the practical aspects of modern life appeal more strongly, will find an incentive in the constant development of new requirements of plan and the adjustment by invention and experiment of materials and workmanship.

We shall perceive in the practical application of a definition of architectural beauty based upon beautiful construction that ancient and modern builders alike, when working with devotion, produced results which are satisfying. We shall then enter into a sympathetic union of aspiration (which perhaps may be a new experience) in finding that buildings are the expression of earnest life, and in the revelation of a fresh harmony of thought we shall discover one of the secrets of the mystery of art.

Intelligent antiquarianism and a sympathetic practicality of mind are each valuable as a standpoint for the architectural student, and both are necessary to a helpful consideration of the mar
branches of study included in buildir
construction. The pursuit of the mo
prosaic and apparently unattractive
the building crafts is not successful
carried to the point at which the stude
becomes first a master and then a creat
by merely picking up the latest threads
practice, contented to learn just how th
thing is now done in order only to empk
a process to attain a result. Building a
is not such tame science as this. In eve
work which issues into real architectu
there is scope for earnest investigation
the motives of derivation, and in the pu
suit of such studies lie the incentives
further new development or design.

It will be evident, if material and wor
manship may be assumed in any vi
of the art of architecture and that for
only is to be considered, that the scer
make-up in stucco of an architectur
Order or style is a result equivalent to t
original construction as an expression
art. The study of form and proportion
an academic classic method, or by the
called historic periods, which ignore t
constructive craftsmanship of building a
is delusive and harmful. Transliterat
forms in any rearrangement, "fresh
designed" may be, are as empty a
vague of meaning as the decorative
scriptions composed of disjointed se
tences from the Koran employed
Mahommedan building. Unhappily,
knowledge of the forms of architecture a
a knowledge of modern building constr
tion, each separately studied, are to
great extent the staple of present-c
studies, examination, and practice, and
this imperfect method of education mi
of the superficiality of design and c
struction in modern architecture may
justly imputed.

The sense that the architect of a p
ticular building was emphatically

Photo: Mrs. Nichols.

40, ST. MARTIN'S, STAMFORD.

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* A paper read before the Architectural Association on September 25th, 1911.

aster of his work, rather than the un- lling slave of intractable materials and kward conditions, is so rarely conveyed the mind by a modern erection other n a simple work of engineering that conclusion is enforced that many archi- ts have no genuine enjoyment in their nding of the building crafts, and are able from want of properly directed dy to express any appreciation of the ans they employ to attain their ends their works.

To the architectural student the remedy this weakness does not lie in devotion a new style of architecture, but in a w style of building; not in a fresh re- lsion from licence in form to austerity, in a craze for individualistic ornament. e remedy is a complete recognition of artistic value of thorough knowledge d direct purpose in construction. "In etness and confidence shall be your ength—but ye would not." Genuine in- est will be found in the quality of h craft or trade, and the unaffected ployment of each for its native or in- e beauty, and interest will replace erficiality, and a sense of texture in terial and suitability in form will fol- . Brickwork can be beautiful both as terial and workmanship, stonework in ptability and freedom of treatment, ting in pattern and quality, carpentry mings and joinery in direct expression construction.

ull acquaintance with the nature and s of the materials for which he has to pare designs, or more exactly in which designs, is of fundamental importance n architect. A slight general acquaint- e will not be sufficient to ensure the hnical sympathy which is recognisable seldom, but is of such value. A certain owledge that does not mistake the lity and peculiar beauty of each terial is needed, so that the problem of design may ally itself directly with the dium of its construction. This har- ny, having very much to do with archi- tural beauty, sound and ingenious con- ction, will be quite readily seen to e intimate connection with a right and pathetic use of material. Constructive l in unsuitable and unlovely material s inharmonious as beautiful form badly structed in a fine material. The art ich employs materials successfully in lding is as real as that which constructs h permanence and economy. Without struction, building is impossible; but ess exercised in suitable materials, with roper sense of their nature and service- eness, fine architecture is equally un- inable.

he study of materials is primary to the nitect, then the study of construction purpose, followed by such æsthetic siderations as have not been evolved in r progress though an artistic mind. impressiveness, which is architec- l, in the Temple of the Sphinx has its n sources in these three primary ams; they here combine in a building owes nothing to what is commonly arded as architectural detail or to etic considerations. Dignity, fitness, security are expressed alike by the erial, construction, and arrangement.

aterial, though a constructive element, however, an æsthetic quality if it rns, as it should, the genesis of the iled form. It imparts the quality of ure, so little understood in English tice. The general tendency here is to use it with the decorative values of erials, which lie solely in their super- l colour or polish. The æsthetic value of a building material, however commonplace its nature, is to be expressed by its use and workmanship, forms deriving character from its natural qualities; and without this æsthetic expression of the texture of material the finer effects of architecture cannot be realised. Into the appreciation of building texture costliness or intrinsic beauty, such as that of marbles, veneers, or of colour veinings or contrasts of richness, do not enter; this decorative aspect of building materials has little to do with the essence of architecture, though one of the first among those many accessories conveniently described as "handmaids." The same considerations which govern the decorative painting of interiors apply generally to the use of materials for their colour or superficial value. Though the student of building construction can be safely advised not to concern himself with these for a while, he cannot undertake as an architect the sympathetic study of materials, for the purpose of designing with them, and no other sense of texture than that which recognises the similarity of red Mansfield stone with red brick, and employs them in juxtaposition to express their common red characteristics. A true perception of texture as a constructive and artistic quality will endow the use of our ordinary building materials, whether employed in important and great works or in such humbler things as warehouses, cottages, or even garden walls, with direct interest and beauty. The student may assure himself that if the texture of each material and its related craft is thoroughly comprehended, he will have at hand a fountain of simple beauty which will give new vigour to design, and which will, besides, place for him the study of ornament upon a new and vital basis. Pseudo-architectural forms which are lifeless apart from their original purpose and material will be replaced by the new stimulus of seeking to express the possibilities and quality of the modern material in his hands.

Will beauty of form, however, attend upon beautiful building construction? It will be fairly obvious to a generation such as ours, reared into a general sense of architectural fitness by education in the mixed particulars of illogical standards of taste, that it will not be so. As a matter of course, to such, any beautiful architectural forms must be derived from some extraneous source and applied to the building, as it would be impossible, for a dilettante, to conceive of building construction as otherwise than Philistinic and ugly.

If this prevalent view is correct and to be maintained by education, we must have a new term for beauty in architecture, beautiful architecture and beautiful building not being identical and not necessarily connected. It is a consequence of this prevalent view that building construction books and those on architectural history proper have dealt with apparently different subjects, the former with the matter-of-fact necessities of building, and the latter with the forms which impart architectural beauty. This conclusion, I fear, represents the state of the case in the minds of present-day authorities; the grouping of subjects and books, schemes of architectural examination and of education leading thereto seem to have as their basis the segregation of the arts of design from the practice of construction. The student is expected to sort himself either as a constructor or artist, and nourish his bent accordingly, and in either compartment he is secure from becoming a great architect.

A definition which seeks for intellectual expression in building construction as the secret of true architectural beauty will almost satisfy the inquiry as to the relation of beauty of form to building art. Refinement and adornment follow upon this premise, and it need not be considered that the bare requirements of an enclosing construction is all the building art allows. TheGreat Pyramid, the Parthenon, the Pantheon, a mediæval vaulted cathedral, or a Renaissance dome each exemplify the operation of trained intellect on constructional problems

It would be an affectation to suggest that books or lectures dealing practically with the needs of a student of building could impart the art of architecture, but it should be claimed that the student of construction should discern the elements of architectural beauty in that subject, just as in the study of beautiful buildings they should be attracted to their fundamentally architectural construction.

The purport of this introductory address is fulfilled in pointing out that the studies of the architectural student should concentrate upon the motives and materials of construction as true sources of varied streams of interest and beauty. Apart from passing fashions, these make architecture permanently effective. Underlying my purpose has been the hope of linking ancient reference with present practice by a linked study of historical buildings, in order to avoid such a concentration of attention on modern use in construction as would relegate precedent to what would improperly be called the artistic side of the architecture. A very narrow view of artistic architecture only would either profess disregard for the modern sense in construction or the ancient in form; the true view equally observes both in each; the artistic architect and the practical builder are not properly separate entities or corporations.

This basis of study is the ideal for the architect: to illustrate and prove it would be easier from the standpoint of a review of past works of architecture than of the means now at hand of achieving fresh ones, but the present is the most living force, with which the student will have to engage, and, modern architecture having nothing wherewith to express herself but building construction, to us the more necessary study shall have the more abundant comeliness.

Of other forces, of the power of the past, of the aspirations of pure artists who were not constructors, we may be led to speak later in dealing with the historical progression of building experiment.

UNIVERSITY LECTURES ON HEATING AND VENTILATING ENGINEERING.

Among the special lectures arranged for the session 1911-12 in the University College Faculty of Engineering (University of London) are courses on Heating and Ventilation by Mr. A. H. Barker, B.A., B.Sc., Wh.Sc., whose name is familiar to our readers as that of the inventor of a heating system of high merit; and Mr. Barker's occasional contributions to this journal will be remembered. His lectures at University College, London, comprise (a) a course on "The Real Nature of the Problems in Heating and Ventilation awaiting Solution by the Engineer," beginning October 17th; (b) a course on the application of the Principles of Science to the Problems of Heating and Ventilation, beginning January 16th, 1912; and there is to be a course of laboratory instruction illustrative of (b). The lectures are delivered on Tuesdays, at 5 p.m., and are intended for students having a sound elementary knowledge of mathematical science, and intending to specialise in the practice of heating and ventilation. The lectures (b) on the detail of the subject will include an examination of the natural phenomena of the subject, and of their adaptation to service in heating engineering. Experimental research for those students competent to undertake original work under the direction of the lecturer will continue throughout the session. Work in the drawing office will include the preparation of complete schemes for the heating and ventilation of large buildings. At the end of the second term, a tour in Germany will be arranged to inspect important installations there. Some observations on this important new departure in technical education will be found in our leading columns.

General Curriculum of University College.

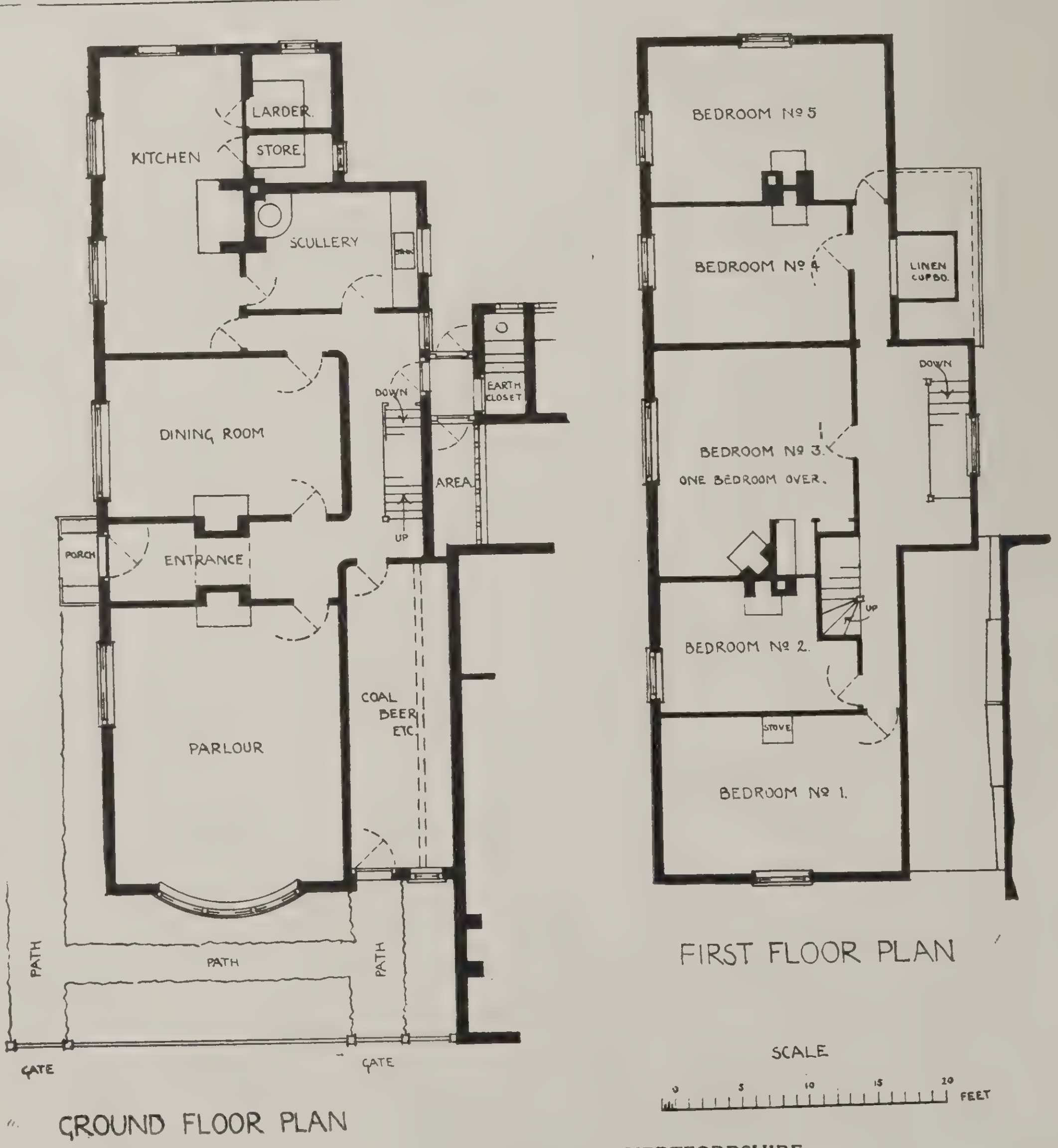
The general calendar for the session 1911-12 of University College (Taylor and Francis, Red Lion Court, Fleet Street) includes, in its complete record and programme of the activities of the Gower Street institution, several important new developments. These concern the study of Italian, phonetics, history, philosophy and psychology, applied statistics, the re-institution of the teachership of sculpture (to which, as we have already reported, Mr. Havard Thomas has been appointed), the institution of a course in academic design in the School of Architecture (with Mr. J. J. Burnet as architect-visitor), and new arrangements in the Faculties of Laws and of Medical Sciences.

The Faculty of Engineering includes courses of instruction in Electrical Design, Modern Methods in the Design of Structures, the Photomicrographic Study of Metals, Railway Engineering, Photographic Surveying, Waterways, Harbours and Docks, Municipal Hygiene, Illumination and Photometry, Water-supply, Sewerage, and Lighting, and Roads, Street Paving, and Tramways.

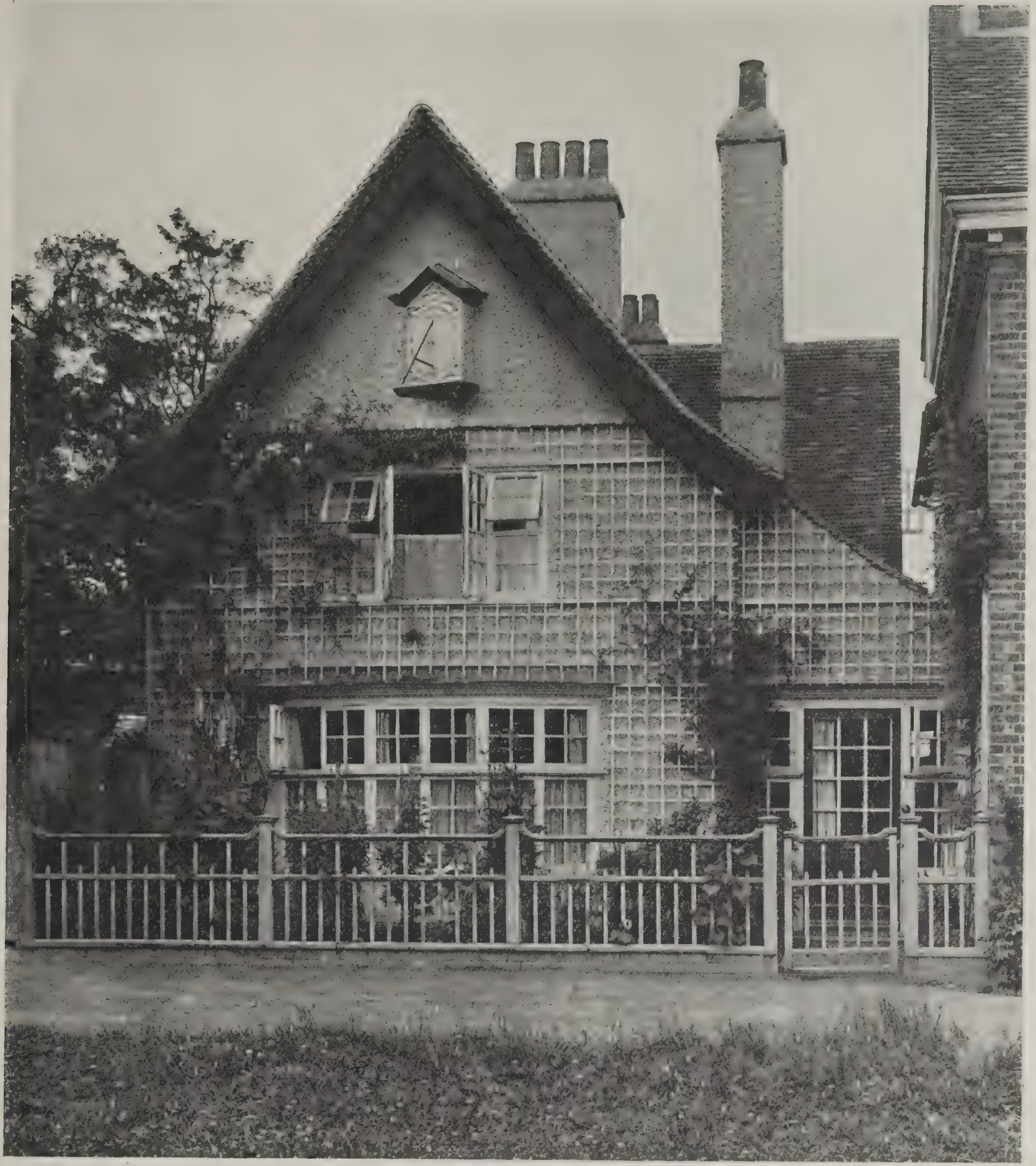
In the School of Architecture, Professor F. M. Simpson, F.R.I.B.A., has for Assistant-Professor Mr. Leslie Wilkinson, A.R.I.B.A. There are three courses—(A) The Certificate Course; (B) the B.A. Degree Course (Honours in Architecture) of the University of London; (C) Academic Design, which course is new, and will begins this month. The courses are arranged (1) to provide the systematic practical training which is necessary for students before they enter an architect's office, (2) to enable students to continue their general studies concurrently with commencing their technical training "The aim is to train men to be architects and not merely architectural assistan The courses are therefore made as bro and comprehensive as possible." In t evening classes which have been organis with the aid of the Carpenters' Compa the Director is Professor F. M. Simpsc Mr. L. Wilkinson being instructor in t Design Class. The special visitors a Mr. Leonard Stokes, P.R.I.B.A., and M Edward Warren, F.S.A, F.R.I.B.A. special lecturer, Mr. Edward S. Pri F.S.A., F.R.I.B.A., will deliver a cou of ten public lectures on "Engl Mediæval Architecture," on Thursdays, 6 p.m., commencing October 12th.

"The Dial House," Westmill, Hertfo shire.

"The Dial House" is an old and v dilapidated house which was reconstruc and added to. The parlour or livi room is at two levels, this unus arrangement having been suggested the owner, Mr. J. J. Greg, while the w was in progress. The walls are rou cast, and the roof is covered with lo red tiles. The sundial in the gable— old one fixed to the new work—gives house its name. The building faces sou overlooking the village green, and is rounded by a garden on three sides. Charles Spooner, F.R.I.B.A., of Lond was the architect, and Mr. T. Nevett Buntingford, Herts., the builder.



"THE DIAL HOUSE", WESTMILL, HERTFORDSHIRE.



"THE DIAL HOUSE," WESTMILL, HERTFORDSHIRE. CHARLES SPOONER, F.R.I.B.A., ARCHITECT.

THE LONDON UNDERGROUND RAILWAYS.

nportant Extensions and Alterations.

everal important extensions and altera- s to the London underground railway ems are now in progress. Most impor- , perhaps, to the majority is the exten- of the Central London tube from the k to Liverpool Street, which will completed early next year. The tube terminus will be under rpool Street Station—to be precise, er the entrance to the west suburban on, at the bottom of the slope. A sub- will connect with Broad Street Sta- , and moving staircases will take the engers up and down between Liver- Street station and the tube station.

: the other end of the tube the Central don railway is stretching out to ng, an extension of more than four s beyond Shepherd's Bush. A portion of the line will be constructed by the Great Western, with whose system the "tube" will form a connection. The line is being rapidly pushed on, and is expected to be open early in 1913, when a through service will be inaugurated from Liverpool Street to Ealing Broadway.

Ealing is also concerned in the District Railway's new track from Hammersmith and Chiswick Park, which is nearly completed. This will give the District a double line of its own, independent of the South Western line, and will enable the running of ten trains an hour from Ealing to the Mansion House, as compared with six at present.

On the Metropolitan the principal work being carried out is the conversion of Baker Street into a first-class modern station. Improved facilities here have been "in the air" for fifteen years, and it became imperative to execute them now in order to reap full advantage of the recent introduction of automatic signalling. Houses have been pulled down in Marylebone Road to give a 200ft. frontage for a steel-frame building. At present it is being put up to the level of the first floor, but eventually a greater clearance will be made in Marylebone Road for enlargement of the building, and the provision of offices for letting.

King's Cross Station, on the Metropolitan, is also being rebuilt. Notable here is the largest reinforced concrete bridge in London—60ft. wide—which is being built (in conjunction with the L.C.C.) to carry the tramways across from Pentonville Road to Gray's Inn Road. This will be finished at the end of the year.

One of the most urgent needs is being met by the construction of a subway from the Charing Cross end of the Hampstead Tube to the District station at this point. Instead of having to come out and take a walk up or down Villiers Street, the passenger will be able to make a direct exchange by means of the subway. This work will be completed in eighteen months. About the same time the extension of the Bakerloo Tube from Edgware Road to Paddington will establish direct connection with the Great Western terminus.

Still another connection, which will be finished early next year, is a subway between Moorgate Street Stations of the Metropolitan and the City and South London.

Reference has already been made to the moving staircases at the new Liverpool Street tube station. Already, however, a moving staircase has been erected, and will shortly be in operation, on the Piccadilly tube, at Earl's Court Station, to take the exchange passengers up to the platforms of the District Railways. The Metropolitan Railway officials also have the question of moving staircases under consideration.

Finally, two developments that indicate the alacrity of the Central London are the catering for parcels and the pumping of ozone into the tube. With regard to the former it may be stated that as many as 250 parcels are now handled daily, while the ozone system is now operating at four stations, and when arrangements are completed at the others a total of 800,000 cubic feet of pure air will be pumped into the tube daily.

ENQUIRIES ANSWERED.

Bringing Forward Shop Fronts.

C.C. and S. write: "Plans for alterations, deposited with an Urban District Council, have been disapproved. The alterations consist of converting two houses into shops by removing the front wall and bays on ground floor only, and bringing forward shop-fronts to the line of those adjoining. The new shop is to be a lock-up shop, one storey only in height, and communicating with one of the old houses by an internal opening. The Council certainly desire the dedication to the public use of at least a portion of the forecourt (the present front gardens). Our client cannot do this, being only a lessee of the premises; also he does not desire to do it, as the forecourt is a valuable acquisition to the shops. The adjoining premises on the left hand side have been built about 15 years, and those on the right about 30 years, the conversion of these latter into shops, and their coming forward having been sanctioned by the Council. Can the Council (apart from the plans complying with the bye-laws) refuse their consent to the shop-fronts being brought forward to the line of adjoining shop-fronts to which they have already consented?"

—You are quite right in thinking that it is impossible for a lessee legally to dedicate land for the use of the public. Of course, the action of the Local Sanitary Authority is very unfair as you describe it, and they cannot logically refuse you the permission they have accorded to the owner of the adjoining property. Legally their position is defined by Sections 155 and 156 of the Public Health Act, 1875, the latter of which runs: "It shall not be lawful in any urban district, without the written consent of the urban authority, to bring forward any house or building forming part of any street, or any part thereof beyond the front wall of the house or building on either side thereof, nor to build any addition thereto beyond the front of the house or building on either side of the same."

The penalty for infringing this law is 40s. per day after the receipt of written notice from the Council.

You occupy a very strong position, and I am of opinion that you can compel your plans to be passed by obtaining a "mandamus" from the High Court. Possibly a letter from your solicitor to this effect would do all that you require. F. S. I.

Bearing Surfaces for Girders.

P. N. (India) writes: "A difference of opinion has arisen between myself and some engineering authorities on the bearing surfaces that should be given to m.s. joists carrying floors and roofs, with a distributed load of 1½ cwt. per ft. super., and supported on brick walls, overlaid with stone templates 3 in. thick going the full width of walls, under joists. Case I.: A room 20 ft. across is spanned by R.S.J.'s 12 by 5 at 32 lbs., spaced 5 ft. apart, with a distributed load 1½ cwt. per ft. super., i.e., with a load of 7½ tons per foot run of joist. Under each joist 3 in. thick stone bedplates are laid for its seats. What would be the right spread lengthwise of the joists? I think the effective span should be the length of the joist, i.e., the joists should be 21.8 in length, and it would be waste to extend its length further.

"Case II.: Two rooms side by side, of equal dimensions, 20 ft. across, are spanned with 12 by 5 joists. The middle wall, only 1 ft. 3 in., or it may be even 10 in., has to support both joists on the same stone bed plate. In the case of 1 ft. 3 in. wall, the joist gets a bearing of 7½ in. only. In the case of a 10 in. wall it gets only 5 in. for bearing. Are these sufficient?

"Case III.: A corridor 10 ft. wide is carried on I-joist stanchions supporting 12 in. by 5 in. lintels, which again carry, say, 10 in. by 5 in. cross joists of rooms of both sides. In this case the cross joists get only a bearing 2½ in. over the lintels, assuming that joists from both sides meet in the same line, and they are not continuous. Unless coverplates are bolted or riveted over top flange of the lintel joist, it cannot be attained. What should be the proper arrangement of the fixings?

"With regard to bearing surfaces of the stone templates. Assuming that they cover the full width of the walls, what should be their lengths on the centres of which the joists are placed? If it so happens that joists have to be placed on a wall (1 ft. 3 in. wide) with a space of 9 in. or so between, what ought to be the length of the stone template?. It may be mentioned here that our bricks are 10 in by 5 in. by 3 in., and consequently our walls are components of 5 in. in thickness."

—Case I.: The girders being 20 ft. span and 5 ft. centres, the load on each at 1½ cwt. per ft. sup. $=\frac{20\times5\times1\frac{1}{2}}{20}=7\frac{1}{2}$ tons or $\frac{7\frac{1}{2}}{2}=3.75$ tons on each support. Allowing 10 tons per sq. ft. on the stone template the required bearing area of the girder $=\frac{3.75}{10}=0.375$ sq. ft.; as the girder is 5 in. wide the necessary length

$$=\frac{0.375}{\frac{5}{12}}=0.9 \text{ ft. say 1 ft.}$$

In Case II., as the width of wall is only 15 in., and two girders meet, the length of bearing is fixed, $\frac{15}{2}=7\frac{1}{2}$ in. As this is insufficient a steel bearing plate must b inserted between girders and templates

$$\frac{0.375}{\frac{7.5}{12}}=0.6 \text{ ft., say } 7\tfrac{1}{2} \text{ in. wide.}$$

It may be in two pieces, one rivete to each girder. In Case III. 12 in. by 5 in. by ½ in. steel bearin plate may be riveted to top flange of mai girders where the cross girders rest. It generally sufficient to proportion a ston template so that it extends 6 in. beyon the girder at each side.

HENRY ADAMS.

Our correspondent subsequently en quired for the following information: (Has Prof. Adams's new book on cor struction yet been published? (2) Wha other books can you recommend for skel ton steel-framed buildings containing ca culation of stripes, etc., on three differer members? (3) Is there any book on stai case building—iron, wooden, and stone- giving details of connections, and illu trated, supported by calculations?

—The book entitled "Examinatic Work in Building Construction" is pul lished, and may be obtained from Messr Batsford, Holborn, London, post free f 2s. 9d. "Theory and Practice in Desig ing," which is the book specially referr to is being published by Messrs. Co stable, and will be ready for issue at th end of this month. "Reinforced Concre in Theory and Practice" is being pu lished by Messrs. Longmans, Green ar Co., and will be ready for issue October. "The Mechanics of Buildir Construction" is practically complete, b has not yet been put in the publisher hands. Mitchell's "Advanced and Honou Building Construction" (Batsford, 6s.) w be found very useful, also Twelvetree "Structural Iron and Steel" (7s.).

HENRY ADAMS.

CORRESPONDENCE.

"*What the Royal Academy Ought To Do*

To the Editor of THE ARCHITECTS' AN BUILDERS' JOURNAL.

SIR,—In your interesting article whi points to the desirability of inclusion the Royal Academy summer exhibitio of works of applied and industrial ar much is made—certainly not too much of the general lack among the pub of a well-directed artistic appreciation.

Here lies the crux of the question raise

It is said that the music at Buxton of a high order. Buxton is the summ resort of the more cultivated inhabitan of Manchester, who are known to ma the most critical musical audiences England, and would not for a mome tolerate a bad orchestra.

When the mass of the British pub is equally cultivated in the arts or made to understand its limitations this respect, then the direction of t expert may have weight. Not till the

If we are to raise the standard artistic production in any of its form, we must do all we can to raise the sta dard of the public taste.

This can only be done by taking hand the artistic education of our ch dren. That is the main problem bef us, and a concentrated endeavour shou be made to solve it.

Yours obediently,
SOLOMON J. SOLOMON

London.

RCHITECTS AND ASSISTANTS

FROM A LEGAL CONTRIBUTOR.

The question how far an architect may legate his duties under a contract to subordinate is one which often arises in actice. Where the work in hand is of ny magnitude, it is impossible for a incipal to attend to every point himself. e must either employ an assistant, or se place an undue amount of confidence the contractor and his workmen. As e architect owes a duty to the employer see that the building is properly erected the contractor, he must, in general, ke the risk attaching to the employment an assistant. There are, however, cer- in questions relating to the employment an assistant which merit attention. As general rule a building contract makes reference to the assistant, nor does it pressly confer upon the architect any wer to delegate his duties to a sub- dinate. It is not uncommon, however, find a clause in the conditions attached a contract to the effect that: "The chitect shall mean Mr. A. B. or other e architect for the time being, or from ne to time duly authorised and appointed writing by the employers to superintend the construction and erection of the orks." Where such a clause is in force, is obvious that the contractor need not y any attention to the orders of any chitect other than the architect named the contract, or some other gentleman ting under the written authority of the nployers. The best plan is to insert a use in the contract conferring power on the architect to appoint an assist- t, and expressly limiting the duties of e assistant. The following is a con- nient form of clause:

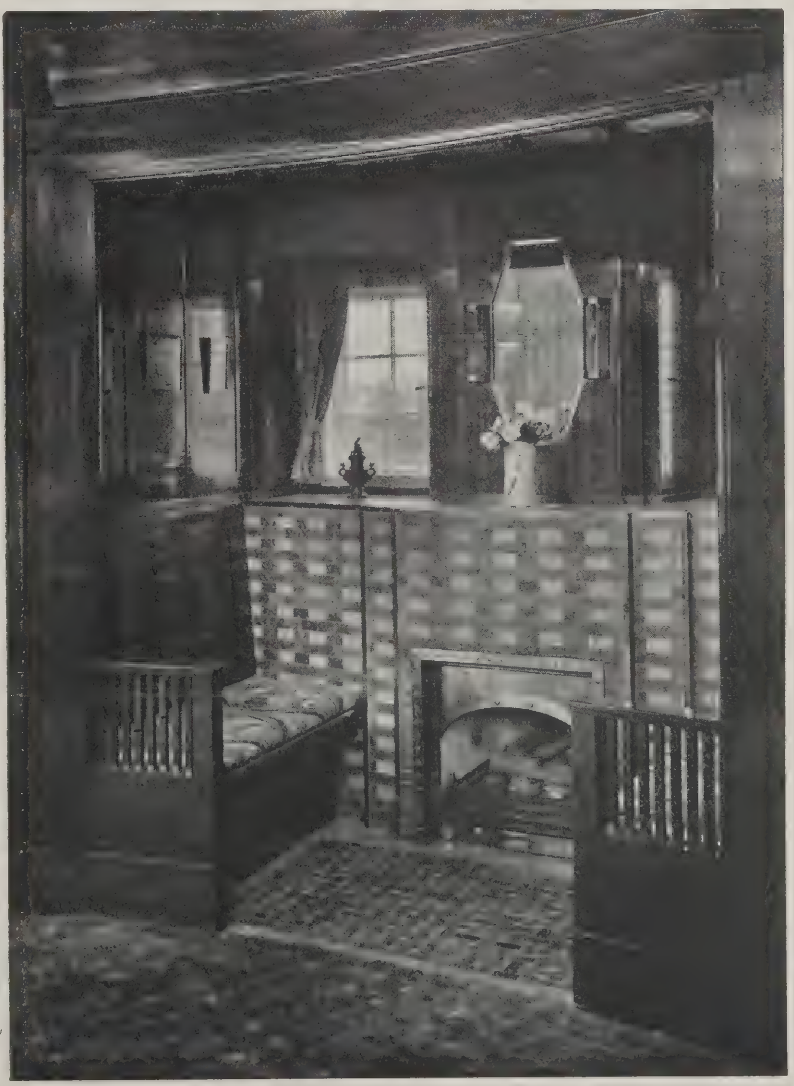
"An assistant architect will be employed the architect, and is in the architect's sence to be considered his deputy; but shall have no power to order or permit y deviation from the contract. His rections on all points relative to the de of carrying on the works or to the ture and quality of the materials used workmanship executed are to be re- ived and acted on by the builder."

Sometimes, however, the contract pro- des for payment on certificate by "the chitect, for the time being, of the em- oyer," or "the architect in charge of e work." In such cases it is submitted at the granting of certificates will be e duty of the architect in charge at the ne when the work in question was done. here, however, the chief architect is erred to by name, the duty of certify- g must be discharged by him, and by m alone (see Ranger v. Great Western ilway, 1854, 5 H.L.C. 72, 91). Gener- y speaking, the maximum *respondeat perior* applies to make the architect ble for the acts and defaults of an sistant employed by him. It would be possible for any responsible person to allowed to shield himself behind a sub- dinate. It has been decided that an chitect is not entitled to rely implicitly the efficiency of the clerk of the works. must himself exercise reasonable pervision. For instance, in Saunders v. oadstairs Local Board (1800, 2 H.B.C. 9.) engineers who were charged with gligence in the laying out and super- ending the erection of certain sewers, lied (*inter alia*) on the fact that the fendants had appointed an incompet- t clerk of the works. This, however, as held to be no excuse for their negli- nce. It is not competent for an archi- t to entrust the entire work of super- ion to his assistant. A Scotch case may be usefully cited in this connection. An architect was charged with negligence in not having properly supervised the erection of a building. Owing to certain boards having been laid down on damp mortar, dry rot set in some time after the building was completed. It was held that he was liable. The judges pointed out that an architect does not fulfil his duty of supervision merely by making occasional visits to the building and getting any parts of the work set right which he happens to notice are not in accordance with the contract. His duty is to give such supervision as will reasonably enable him to certify that the work of the contractors is according to contract.

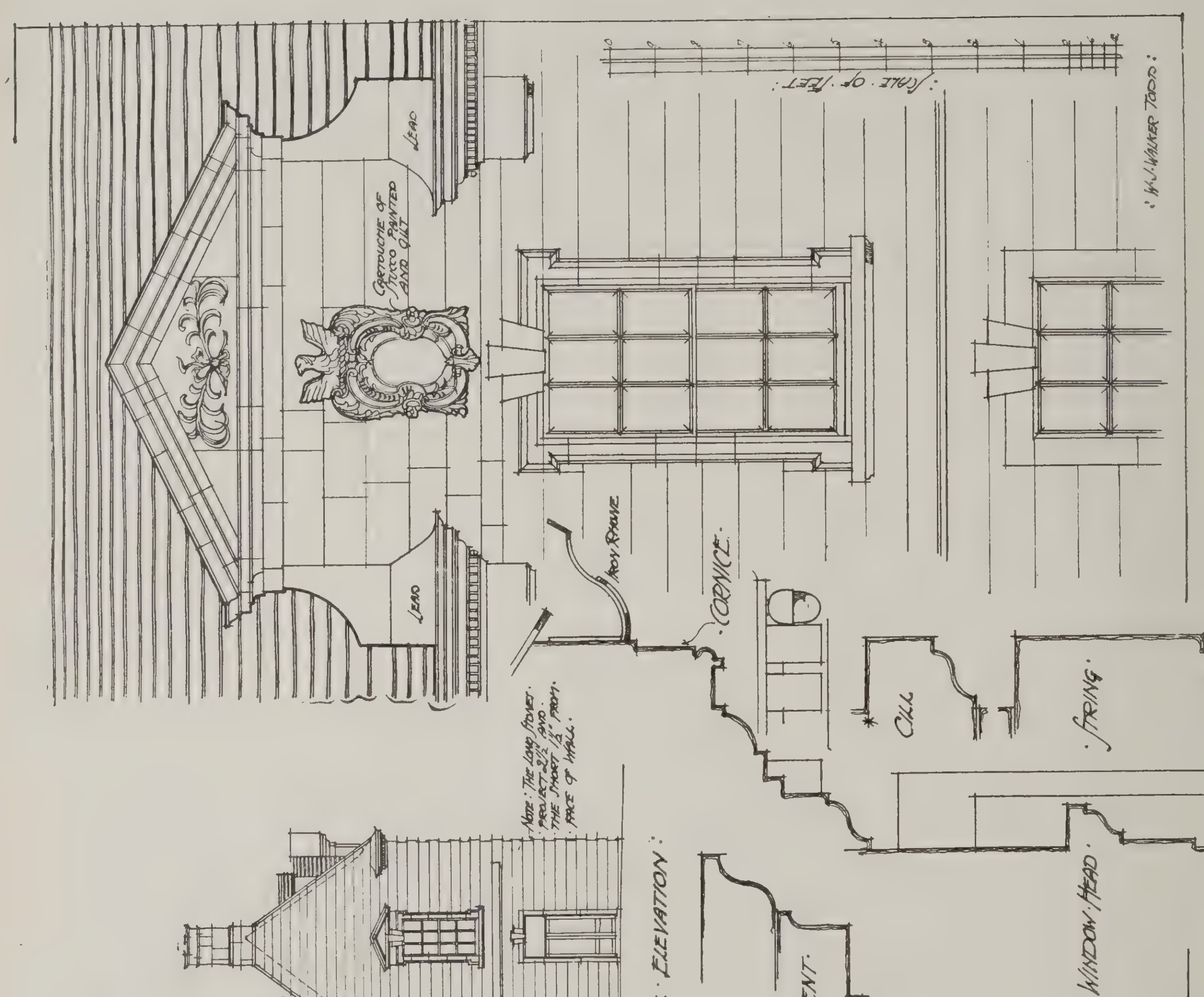
The following passage from the judgment of the Lord Chief Justice (At. p. 1219) seems accurately to define the duty of an architect in carrying out the work of superintendence: "There may, of course, be many things which the architect cannot be expected to observe while they are being done—minute matters that nothing but daily or even hourly watching could keep a check upon. . . But he, or someone representing him, should undoubtedly see to the principal parts of the work before they are hid from view, and, if need be, I think he should require a contractor to give notice before an operation is to be done which will prevent his so inspecting an important part of the work as to be able to give his certificate upon knowledge, and not on assumption, as to how work hidden from view has been done." But the mere detailed checking of materials delivered on the site may be safely entrusted to a subordinate. For instance, in Graham v. The Commissioners of Works (1902, Emden's Building Contracts, p. 670) it appeared an architect, having first ascertained that portions of the timber used were not of the stipulated quality, delegated the duty of particularising what timbers were to be removed to the clerk of the works. It was held that he was entitled to do so. The judge said: "If the architect is unable to exercise sufficient supervision over the works while in progress, he may have to delegate this duty to an assistant. The duty of the assistant in such circumstances will be to secure, by constant watchfulness, the proper fulfilment of the contract. He will act under the architect and report to him. The authority of the assistant would include, amongst his other duties, the exercise of authority to stop the progress of work condemned under the contract, to decide in constructive emergencies, and to order necessary changes."

A GERMAN FIREPLACE.

Herr Muthesius is well-known to architects though his excellent volumes dealing with modern English domestic work; and certainly it would seem that the fire-place in a house in Berlin, illustrated below, derives not a little of its inspiration from English examples; such fire-places being quite unusual in Germany. We are indebted to "Hearth and Home" for the illustration.



FIREPLACE IN A MODERN GERMAN HOUSE. H. MUTHESIUS, ARCHITECT.

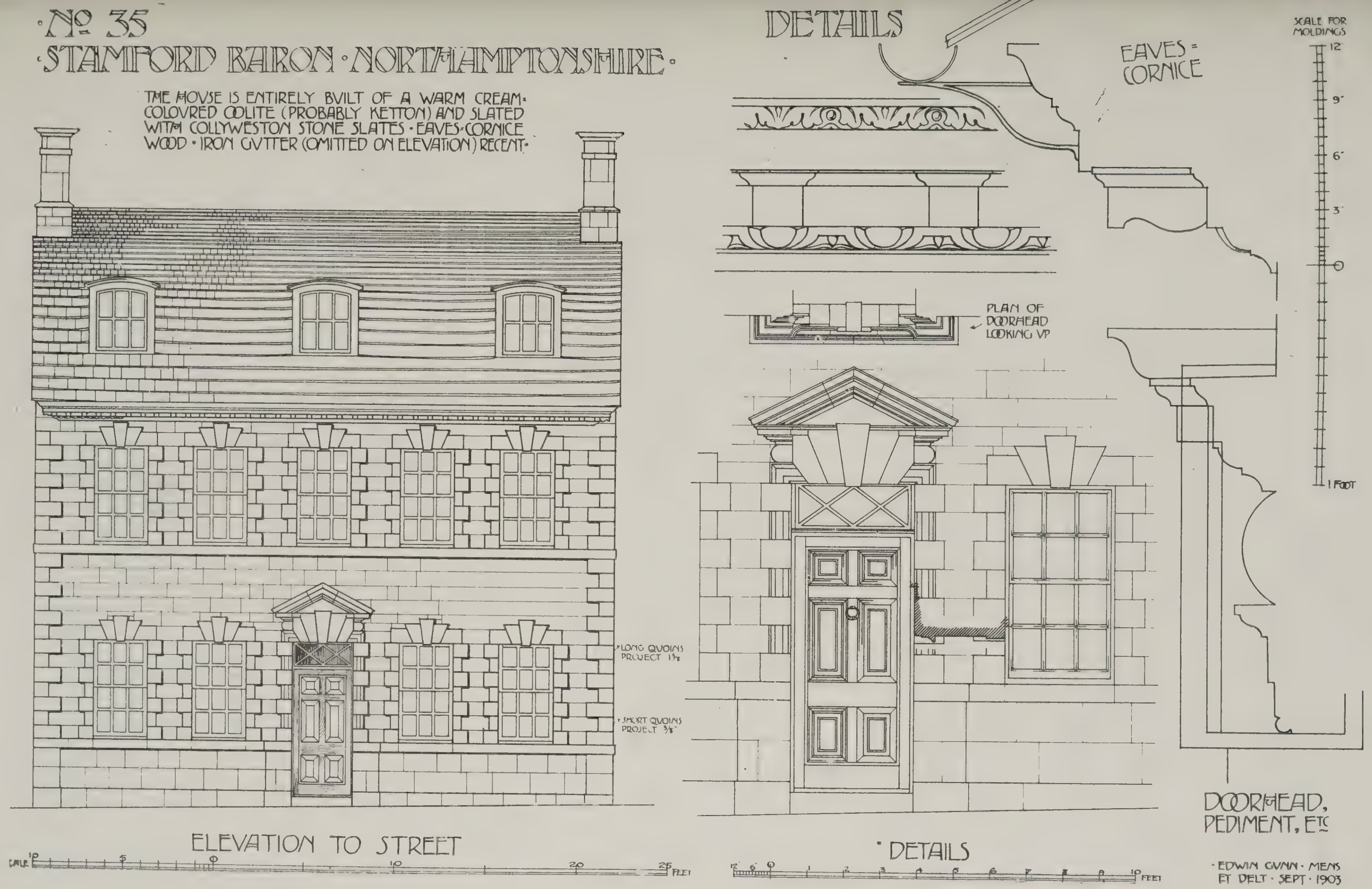

No. 41 · HIGH · STREET · STAMFORD · LINCS ·
Cartouche of stucco painted and gilt
Lead
Lead
Iron rhone
Cornice
Note: The long stones project 3½" and the short 1½" from face of wall.
Side · Elevation
Pediment
Window · Head
Cill
String
Details
Inches
Front · Elevation
Detail of window in gable
Scale of feet
Scale of feet
W. J. Walker Todd

MEASURED AND DRAWN BY W. J. WALKER TODD.

·Nº 35

·STAMFORD BARON·NORTHAMPTONSHIRE·

THE HOUSE IS ENTIRELY BUILT OF A WARM CREAM-COLOURED OOLITE (PROBABLY KETTON) AND SLATED WITH COLLYWESTON STONE SLATES·EAVES·CORNICE WOOD·IRON GUTTER (OMITTED ON ELEVATION) RECENT·



MEASURED AND DRAWN BY EDWIN GUNN, A.R.I.B.A.

(A photograph of the above appears on page 353.)

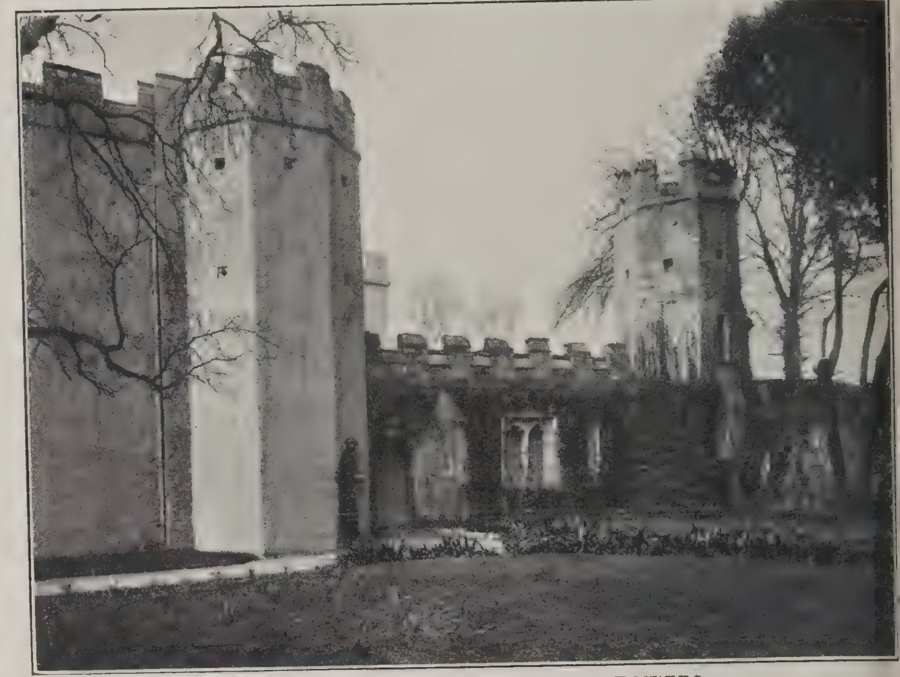
TORRE ABBEY, DEVON.

BY G. LALLY.

Torre Abbey, the country seat of Colonel Lucius Cary, is one of the most interesting of Devonshire properties. Founded in the year 1196 for Canons of the Premonstratensian Order by one William Brewer, the trusted supporter of four English Kings—Henry II., Richard I., John and Henry III.—it was the twenty-third Premonstratensian abbey built in England. The 713 years that have elapsed since its erection may be divided into two periods, namely, the 343 years during which the buildings were occupied by the Premonstratensian canons, and the subsequent 370 years during which it has been used as a private residence.

On approaching the west front one is struck by the ancient gateways through which the first view of the abbey is obtained. The gatehouse, called the "Mohun" Gatehouse, was erected between the years 1310 and 1330. It has two entrances, one wide enough for carriages and the other accommodating a smaller footway. Carved on the keystone of the larger entrance, in red sandstone, are the arms of Torre Abbey, a chevron between three pastoral staves, while in the second bay is the simple device of the founder, William Brewer, comprising wavy lines in gold on a red background.

From the Mohun Gatehouse one passes to the Abbot's Tower, which includes the main entrance. The modern dining-room here was formerly the abbot's private apartment, the old guest hall of the abbey, which runs south of the dining-room, being now the entrance hall: its massive beams and age-eaten door a delight to the heart of the antiquary and the architect. Under the guest house are two crypts in an excellent state of preservation. The entrance to the old cloisters is another feature of interest. The doorway is 5 ft. thick, built with the evident intention of taking the weight of the church tower.

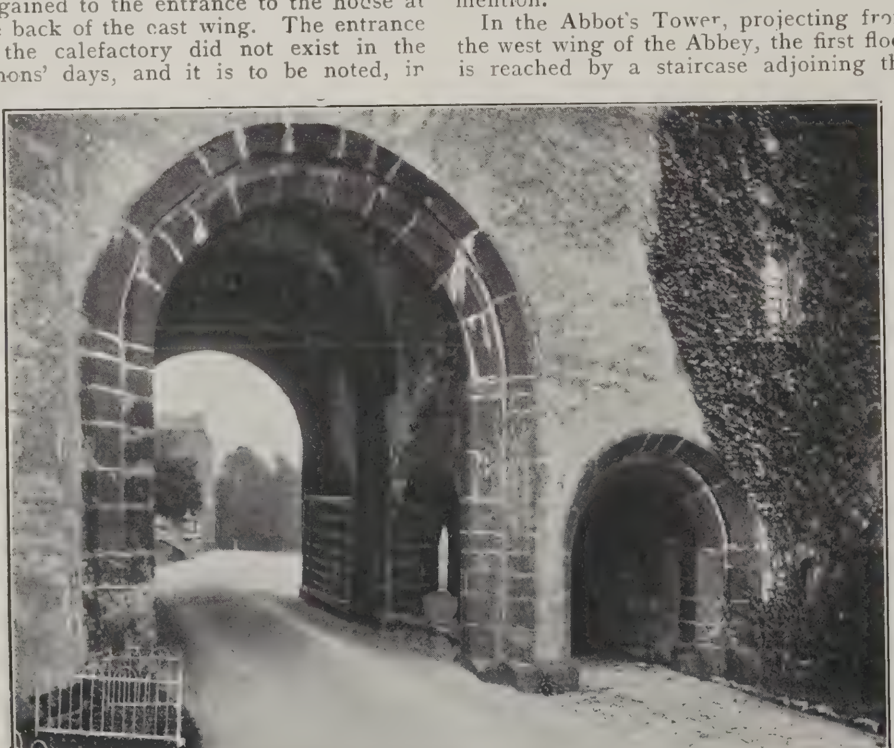


TORRE ABBEY : OLD WALL AND TOWERS.

From the cloisters one passes into the canons' calefactory, through which access is gained to the entrance to the house at the back of the east wing. The entrance to the calefactory did not exist in the canons' days, and it is to be noted, in passing, that a small built-up doorway in the south wall was probably used by the lay brother to bring in fuel for the fire. The position of the fire-place that gave to this apartment the name of calefactory can be traced in the east wall, to the right on entering. In monastic times this was the room where alone the strict rule of silence could be relaxed; hence it was also known as the locutorium, or room for conversation. The entrance to the refectory sub-vault was on the south side, immediately under where the pulpit of the refectorium would be placed in the wall, the site of this pulpit being now occupied by the modern entrance to the abbey.

Inside this old and historical house the many stairways form a perfect labyrinth for the uninitiated. The finely carved staircase that leads from the guest hall to the first floor calls especially for mention.

In the Abbot's Tower, projecting from the west wing of the Abbey, the first floor is reached by a staircase adjoining the north side, but as the level of the road originally 2½ ft. lower than it is at present day, and the lighting of the gu hall and under-croft have both b altered in this corner, there is little do that this was not the original means access to the guest hall and the abb quarters. Judging by the thickening the masonry on the right-hand side the basement entrance, it may be ta that the stairs were placed at this po the doorway probably being in the so side of the tower. The second store reached by means of the staircase leads from the first floor to the dini room, through a doorway made in south side of the tower, while in the thickness of the wall three high step stone have been inserted. This door like the staircase, is modern. The cham (which was doubtless the abbot's stu as well as the third storey containing clock, were connected by a newe staircase in the south-east corner of tower direct with the abbot's rooms. stairs now only lead from the second fl but the structure of the steps, the de tion of the line of wall below, just in the entrance into the former guest and a recess in the wall of the adjoi pantry, show indubitably that these s connected the upper rooms of the to with the abbot's apartments.



TORRE ABBEY : VIEW LOOKING EAST THROUGH GATEWAY.

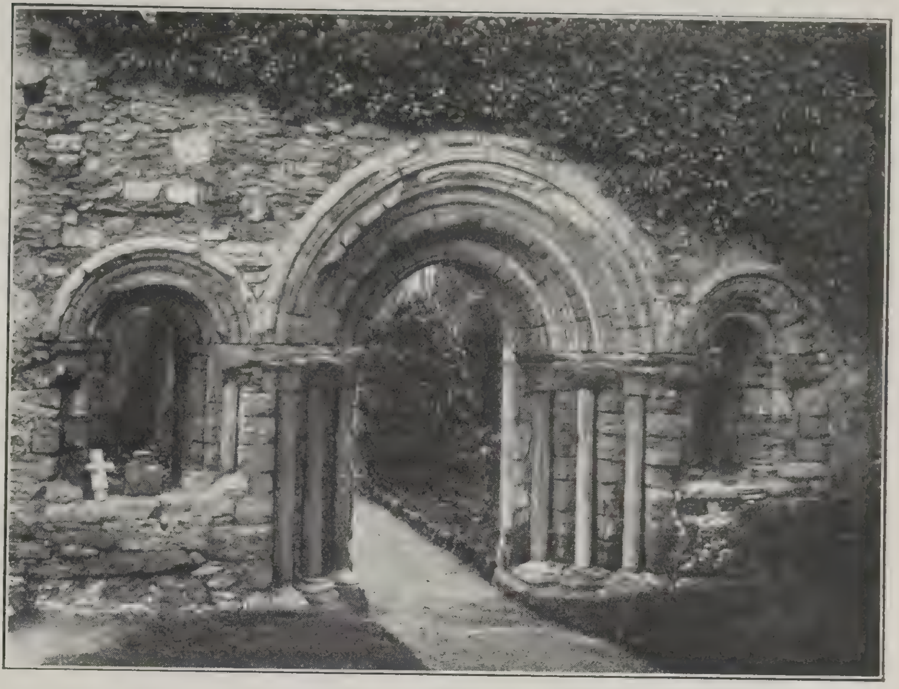
The tower underwent complete repa 1874, when the floors were renewed the second storey was panelled. On the most interesting features of this t is the bell on which the clock now str This bell was formerly rung in a s wooden belfry on the roof, by a rope the first storey. It is 13½ in. in dian at the mouth, and is reputed to have taken from one of the ships of the Spa Armada. Judged by its size, it may tainly have been a ship's bell, but th clapper has no fastening for lanyard, moreover bears an inscription in Old lish characters more or less undeci able, which leaves little doubt that is one of the original Abbey bells.

Passing through the spacious groun Torre Abbey, one is confronted by a relics of the past ecclesiastical house ruins which have been excavated bei a wonderful state of preservation.

The east wall of the cemetery (in which
re recently excavated two stone coffins,
obably containing the bones of some
urch dignitary) terminates at its south
l against, but is not built into, the north
ll of a ruined building, the significance
this fact being that the building was
re before the wall was erected. The en-
sure of the cemetery was one of the
t duties of the canons, and from the
terial and nature of this cemetery wall
Torre Abbey there is every reason to
ieve that it dates from the foundation
the Abbey.

)nly the north wall and the north end
the east wall of the old "East Aula"
hall) now remain above ground. A
nice of stone suggests that the room
s 14 ft. high.

'he "Spanish Barn" is another interest-
feature, dating as it does from the
liest days of the Abbey. The name is
ved from the fact that 397 prisoners
n the galleon "Capitana," captured
n the Spanish Armada and brought
Torbay on July 26th, 1588, were put
'durance vile" in this building, while
vessel was being dismantled. The pri-
ers appear to have been kept in the
anish Barn" for several weeks, when
were separated, five of the principal
nders being sent to the Lord Lieu-
nt, who committed them to the town
on of Exeter, while 166 were put back
board and shipped off to Dartmouth,
remaining 226 being sent to the "House
Correction near the City of Exeter."
s record refutes the theory at one time
nt that a massacre of these prisoners
place in the Barn.



TORRE ABBEY: DOORWAY OF CHAPTER HOUSE.

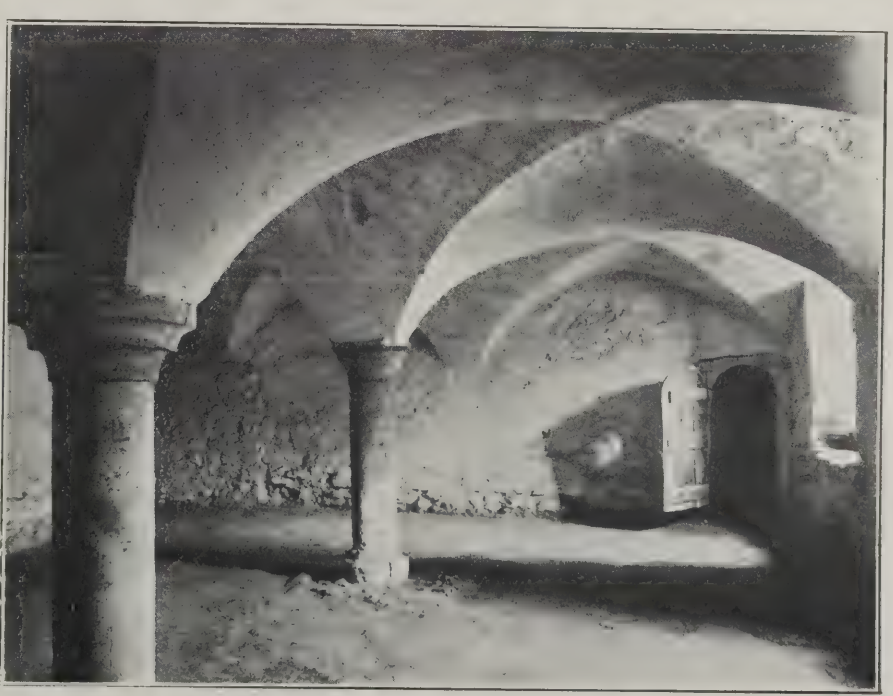
ONDON'S NORMAN BUILDINGS.

the course of an itinerary or "chron-
ical survey" of London and its anti-
ies, the Joint Congress of the British
æological Association and the London
Middlesex Archæological Society last
inspected Norman architecture. The
rary began with a visit to the Tower
ondon, and Mr. Allen S. Walker, hon.
etary, explained to the archæologists
salient features of the buildings. In
view the exterior of the Tower of
lon, which, he said, was really the
er of Stepney, had been spoilt by Sir
stopher Wren. The Tower now
ed down with the nice placid atmos-
e of the great Sir Christopher. At
ame time he hoped that Wren's work
d never be obliterated, because he
done just what the Norman did before
namely, followed the Romans. As
e theory that Cæsar built the Tower,
ought it could not be supported by
. It was the wish of Willian the Con-
or to build the Tower as a redemption
is promise to defend London. His
was continued by William Rufus,
the Chapel of St. John, in which the
eologists were assembled, was not
ed in the time of the Conqueror.
White Tower was of the eleventh cen-
stamp. The Normans copied Roman
, and the work in the chapel was so
ct as to convey the impression that
was in Italy.

the museum, formerly the banqueting
the huge hearth, discovered in 1894,
ointed out.

er visiting the Torture Chamber, the
rypt of the chapel, and the Chapel
. Peter ad Vincula, the archæologists
eded to the Church of Allhallows-by-
Tower, and inspected the Norman
ents at the extreme west end. The
h was saved at the time of the Fire
of London by Samuel Pepys, who, in his anxiety to save the Navy Offices, had the buildings round about blown up.

St. Olave's, Hart Street, Mr. Bryan Corcoran indicated the features of the church, which is one of the smallest in the City. The curious ironwork at either side of the organ was contrived in order to encourage men to hang up their hats rather than wear them. The next point in the itinerary was the Norman crypt in Allhallows Staining churchyard, which, known as the Hermitage of St. James-in-the-Wall, was removed from Cripplegate, and is now preserved by the Clothworkers' Company. The archæologists found much to interest them in the Church of St. Mary-le-Bow, Cheapside, formerly the centre of the Saxon city. Some authorities hold the view that the Norman crypt here was originally a church, but Mr. Walker pointed out that it was the Norman fashion to build a crypt first and then raise a church upon it, as was done at Canterbury and Gloucester. In rebuilding the church Wren intended to give a reproduction of the basilica of Constantine of Rome. It is Wren's most expensive church, costing over £15,000. A move was next made to St. Bartholomew the Great, Smithfield, the first evidence of Norman ecclesiastical edifices in the City of London. While the archæologists had seen examples of the crude masonry of the eleventh century, here they saw the finer work of the twelfth century. The feature of the restoration effected by Sir Aston Webb was that the beauties of the old architecture had been retained rather than concealed. The programme of Norman London was brought to an end by a visit to the Church of St. John, St. John's Lane, Clerkenwell.



TORRE ABBEY: CRYPT UNDER WEST FRONT.

ARCHITECTURAL MASTERPIECES OF LONDON.

Under this heading, in the September issue of "The Nineteenth Century and After," Mr. E. Beresford Chancellor has a dozen pages or so of light and airy gossip, in which architectural and miscellaneous *ana* are pleasantly blended, with the object of interesting the laity in the "masterpieces," their associations, and most especially in their architects, where the latter happen to be known. It is, however, curious how many of the buildings are anonymous—their architects or chief builders cannot be named; but Mr. Chancellor deplores, as we all do, the curious ignorance and indifference of the public with respect to the authorship of buildings to which names can be indisputably assigned.

Of course, says Mr. Chancellor, the lapse of ages has, in some cases, obliterated such records. Thus the original builder of the Tower of London is as unknown as the architect of the Tower of Babel. Poetic licence has, indeed, helped to make confusion in this respect worse confounded, for it seems satisfactorily proved that Cæsar, whose name has been thus connected with it, had nothing whatever to do with its erection; and if there be one name that is more closely associated than another with London's most interesting landmark, it is that of Bishop Gundulf, who, in 1078, was appointed by William the Conqueror overseer and surveyor to the building. But the Tower is one of those landmarks which are essentially rather the product of successive ages than the work of one period, and it may not be generally known that its chief feature, the White Tower, owes much of its present appearance to Wren, who faced its windows with stone after the Italian fashion, and thus gave it that almost modern character which it wears to-day.

Again, in the case of Westminster Abbey, that "Sepulchre of Kings," as Jeremy Taylor calls it, no one man can be named as its designer, the most beautiful portion of the fabric, Henry the Seventh's Chapel, probably being the work of the Flemish and German craftsmen who, at that period, began to swarm into this country; and the only portions that can in any way be connected with a British architect are the not particularly successful west towers, which were carried out by Hawksmoor, in 1739, from the designs left by Wren, but which, had that consummate artist lived to complete the work, would, one may be sure, have evolved themselves into something more worthy of his splendid powers.

St. James's Palace, or rather the fragment which dates from Henry the Eighth's day (for, as regards the rest, ignorance of its architect is perhaps as well), is another London architectural feature of whose designer we are ignorant, although there is a tradition that the plans for it were prepared by Thomas Cromwell; while another report has it that he merely superintended designs supplied by Holbein.

Yet there are in London hundreds of fine buildings of a later date whose designers are known—but only known to those who have given themselves to the particular study of this phase of London's history.

There are, for instance, Wren's churches, of which others than architects know something, and can point, with a borrowed knowledge, to their striking merits and even their more recondite excellences. The spire of St. Bride's, "a madrigal in stone," as the late Mr. W. E. Henley called it, with its daring repetition of design which, in the hands of a lesser man, would have proved jejeune and monotonous; that of Bow Church, perhaps the finest of all Wren's beautiful steeples; the glorious interior of St. Stephen's, Walbrook, which Canova said was alone worth a journey from Italy to study; St. Clement Danes, with its originality of contour, the vista to which is now spoilt by the statue of Mr. Gladstone that blocks it out; these, and how many others dotted about London, from the east to the west, are known to those who seek for beauty and find it in their admirable outlines.

In 1708 an Act of Parliament was passed for the erection of fifty churches, and at this moment three fine architects were at hand to carry out the wishes of the authorities: Gibbs, Hawksmoor, and James of Greenwich, as he is called. The first-named was responsible for two of London's best-known churches, St. Martin's-in-the-Fields, and St. Mary-le-Strand. The former succeeded a church which had existed at this spot since the days of Henry the Eighth when (1535) the parish was first separated from that of St. Margaret's, Westminster. In 1607 a chancel was added to the fabric at the charges of Henry, Prince of Wales, but at the end of a hundred years the building was found to be quite inadequate to the greatly increased parish, and in 1721 Gibbs was commissioned to design th present church. It was the second f which he was responsible, and anxie to make it a masterpiece, coupled wit the knowledge that it was to occupy o of the most prominent sites in Londo undoubtedly caused him to take unusu pains with it. Indeed, the portico, i chief feature, is probably unsurpassed i the Metropolis for unity of combinati and beauty. Sir William Chambers w so delighted with it that he even venture to compare it with the Parthenon, b this is the sort of unconsidered eulog that is apt to do more harm than good an architect's reputation by overstati the case; a fault that the poet Savag also fell into when he wrote the lines:

O Gibbs! whose art the solemn fane ca
raise,
Where God delights to dwell and man
praise.

But, hyperbole apart, there is no dou that St. Martin's-in-the-Fields is one London's most beautiful churches; and is but justice to its architect's memo that his name should be remembered connection with it.

St. Mary-le-Strand was the first chur Gibbs was employed on, and it was al the first of the fifty new churches whi it was intended to erect. It was co pleted in 1717, but not as it was origi ally intended so far as the exterior desi was concerned for in place of the prese steeple only a small campanile or tur was to have stood at its west end, and about 80 feet from it a column surmount by a statue of Queen Anne was to ha risen. The Queen's death, howeve

TORRE ABBEY: MAIN STAIRCASE.

used the Commissioners to alter their inds, and Gibbs was instructed to design e present tower. There can hardly be o opinions as to St. Mary's inferiority St. Martin's; it is narrow, it wants gnity, and it is made up of too much tail to be wholly effective, but com- red with many other sacred edifices it successful enough. One wonders how ten it is confounded with the neigh- uring St. Clement Danes as the work Wren. Its steeple is, indeed, so good at the greater man might have been not willing to claim it as his own.

If Hawksmoor was not, on the whole, great an architect as Gibbs, at least he as responsible for five churches which, equal in merits as they are, yet show at he was only less better than the st. Four of these are in the east: St. nne's, Limehouse; St. George's-in-the- ast; St. Mary Woolnoth; and Christ hurch, Spitalfields. They were erected tween the years 1712 and 1729, and the t is probably the most original in its sign of any church in London, for, as . Blomfield says, "In the tower Hawks- moor broke away from all precedent." chitects will appreciate this when it is inted out that Hawksmoor "has re- ned the entablature right across from rth to south, with two additional lumns inserted in the width of the ve, thus forming a screen, and above s he has placed the royal arms; . . . tower stands at the west end, and yond it is a bold portico of four tached columns carrying an entablature th a semicircular vault above it in the atre." On the north and south sides the tower the entablature forms cir- lar sweeps; indeed, the design is full peculiarities, but what is meritorious the work is that it here wholly dis- ded convention, and struck out a line ich, if open to criticism, is at once ective and highly original. But by far best known of Hawksmoor's churches St. George's, Bloomsbury, which was gun in 1720 and finished some nine ars later. Here, as at St. Martin's, the rtico is the chief feature; and it has ays been a question which of these two ugurated this now common character- c of church architecture; for although Martin's was not begun till a year er St. George's it was finished at least ee years earlier. It is on the summit of latter that what Walpole properly ls "a master-stroke of absurdity" sts in the statue of George the First ich surmounts it. This steeple has obtained another, and a better, claim notice, for it appears in the back- und of one of Hogarth's best-known rks.

still more famous St. George's, that George Street, Hanover Square, was work of James of Greenwich. One poses that this is the best-known church London, for it has been the scene of hionable marriages almost from its liest day. Here Sir William Hamilton wedded to Emma Hart; here the ke of Sussex was joined to Lady gusta Murray, about the results of ch circumstance Lord Eldon tells us such gusto; here the notorious Lola ntés, who ruined a king and caused evolution, was married to Mr. Heald t Heath, as the name is so often ngly given); here the Iron Duke ht have been seen on innumerable asions "giving away" the brides at ionable weddings.

t. John's, Smith Square, Westminster, ch was erected by Thomas Archer ing the latter years of Queen Anne's reign, was the second of the fifty churches, and is said to have cost no less than £40,000. The chief points of the building with which critics have fallen foul are the towers at the four corners. Lord Chesterfield likened it to an elephant with its legs in the air; but there was a cause for these unusual adjuncts over which the architect had no control; for during the erection of the church the ground suddenly began to settle, and rather from necessity than choice the towers were added in order to balance the foundations. Archer intended, when he found these towers were necessary, to raise the body of the fabric and to surmount it with a large central tower and spire; an addition he was not permitted to make.

Flitcroft has two London churches to his credit: St. Giles-in-the-Fields, and St. Olave, Tooley Street, as well as that of St. John, at Hampstead. Like Flitcroft, Dance the elder, who built the Mansion House, designed several churches, notably St. Luke's, Old Street; St. Leonard's, Shoreditch; St. Matthias's Bethnal Green, and St. Botolph, Aldgate. Of these by far the most important is St. Leonard's, in the excellent steeple of which that of St. Mary-le-Bow seems, to some extent, revivified. The others are, however, bald and uninspired, and, did not St. Leonard's exist, would prove that Dance's *forte* was not ecclesiastical architecture. The younger Dance, with whose name old Newgate, although no longer existing, will be for ever identified, was also responsible for at least one church, that of All Hallows', London Wall, which seems to indicate an hereditary disability in this phase of the designer's art.

Many people know that the beautiful water-gate that stands fronting the Embankment was the work of Inigo Jones, and that that supreme master designed the Banqueting House in Whitehall, a mere fragment of the immense palace he contemplated, but do not realise that an excellent specimen of his domestic architecture exists on the west side of Lincoln's Inn Fields, in Lindsay House, and that another—Shaftesbury House, in Aldersgate Street—was demolished but a few years since; or that the relic of Ashburnham House in Dean's Yard, with its superb staircase, although erected under the superintendence of Webb, was substantially the work of the same master.

The dignified and impressive Newcastle House, now known simply as No. 66, Lincoln's Inn Fields, was designed by Captain Wynne or Winde, who was also responsible for the old red-brick Buckingham House, the precursor of the present Buckingham Palace. He built Newcastle House in 1686 for the Earl of Powis, after whom it was at first named. Stone Buildings, on the east side of the square, were erected in 1756 from the designs of Sir Robert Taylor, whose name is perpetuated in the Taylorian Museum at Oxford. He it was who largely added to the Bank of England which had been originally designed by George Sampson, and opened in 1734, and who was also responsible for the Bishop of Ely's old house in Dover Street, now converted into club premises.

At an earlier day much building development about this western portion of the town was done by Kent for Lord Burlington. Many of the houses in Burlington Gardens are his work, so is No. 44 Berkeley Square, with its beautifully and skilfully arranged staircase which he designed for Lady Isabella Finch, and probably Lord Powis's next door which has many of the same architectural characteristics. On a more ambitious scale is Devonshire House, which was designed by Kent in 1735, for the third Duke, but which has been considerably altered since his day by Decimus Burton and Crace. Kent could do better work; for the Horse Guards is his, although he did not live to finish it, and his pupil, Vardy, completed the building. Those who know Holkham, which is Kent's most ambitious piece of domestic architecture, will not need to be told that it possesses certain features in common with the Horse Guards. Vardy was the principal designer of Spencer House, in many respects one of London's most satisfying great houses. "Athenian" Stuart had a hand in it, and planned the St. James's Place front; but Vardy was responsible for the most effective portion that facing the Green Park. Uxbridge House, in Burlington Gardens, now the West-end Branch of the Bank of England, was also designed by Vardy, with the help of Bonomi, but he was not identical with the architect of Spencer House, but was perhaps his son.

Burlington House, as we see it to-day, has been so altered, by Smirke, that its earlier appearance has been well-nigh obliterated; but when it was erected by the third Earl of Burlington, who was assisted in the work by Gibbs, Kent, Colin Campbell, and Leoni (who built Moor Park, in Hertfordshire) it must have been singularly imposing, and an almost universal consensus of contemporary praise attests this. Lord Chesterfield, however, is found in the minority, and so is Hogarth.

Lord Chesterfield, when he came to build Chesterfield House, in selecting Isaac Ware as its architect, found a man who was capable of uniting a comfortable interior with a dignified exterior. It is for this reason that the dwellings he planned in Bloomsbury Square, South Audley Street, Bruton Street, Hanover Square, Berkeley Square, and elsewhere, are not particularly eye-compelling, but are essentially liveable mansions.

The Adam Brothers at a slightly later day, on the other hand, tried to combine these characteristics, and to some extent succeeded, although the very nature of their scheme of decoration, except in certain isolated instances, was hardly virile enough to give particular dignity to the façades they erected. Among the chief exceptions to this in London are Lansdowne House, probably their masterpiece, not only in elevation but in internal decoration; No. 20 St. James's Square; Boodle's Club in St. James's Street, and the large house in Stratford Place, Oxford Street.

Although house-planning occupied most of the energy of the Adams, they occasionally produced decorative work of a different kind, apart, of course, from their numberless designs for doorways, chimney-pieces, etc., which may be seen in so many London houses, and of which fifty folio volumes of sketches are preserved in the Soane Museum; and the most notable example of this is the screen which helps to hide from Whitehall the uninspired Admiralty, which was, by the by, the work of Ripley, who built Houghton Hall for Sir Robert Walpole.

Most people know that Sir William Chambers built Somerset House, certainly one of London's most effective landmarks, even now that the Embankment has spoilt the effect which the river front produced when the Thames lapped its massive water-gate; but the architect's hand may not be generally recognised in "The Albany," originally Melbourne House, which was begun in 1770 for the first Lord Melbourne; or in Carrington House, Whitehall, demolished some years since to make way for the present War Office, in which the splendid rooms and magnificent staircase were worthy of one of England's greatest architects, which Chambers could undoubtedly claim to be.

When we come to later days, the names of those responsible for buildings whose outlines we know as we do our own hand, seem equally forgotten. How many could say that Barry built the Houses of Parliament and the Reform Club, or that Street produced the Law Courts, or that Smirke designed the Carlton Club, to take but these instances? The beautiful ecclesiastical work of Pearson and Bodley, Bentley and Butterfield and Seddon, is around us on all sides, but who can point to the churches which they raised and connect them with the names of their designers? And if this be the case with the work of men who are of our own day, is it surprising that those who are with "yesterday's seven thousand years" should be forgotten?

The ordinary amateur, Mr. Beresford Chancellor says, prides himself on knowing something of the characteristics of the old masters of pictorial art. He will point you out a Raphael or a Reynolds; a Cuyp or a Velasquez, with the assurance of a critic; but in the case of the masterpieces of architecture few appear to take the trouble to learn when they were erected or who were responsible for their design, and the man who would blush to be thought uninformed of the name of a well-known painter will light-heartedly acknowledge his ignorance of the architect of some building whose outlines have been familiar features to him all his life.

COMPETITIONS.

Manchester Art Gallery and Library.

The Special Infirmary Site Committee of the Manchester Corporation met at the Town Hall on Monday last week, when the award of Professor Reginald Blomfield with regard to the selection of the design for the proposed new art gallery and library was received. After consideration it was ordered to be printed, and a copy sent to every member of the Council.

Prizes for Industrial Design.

A competition was instituted in 1878 by the Council of the Royal Society of Arts, as trustees of £400 presented to them by the committee of the Owen Jones Memorial Fund, upon condition, of their spending the interest thereof in prizes to "Students of the Schools of Art, who, in annual competition, produce the best designs for household furniture, carpets, wall-papers and hangings, damask, chintzes, etc., regulated by the principles laid down by Owen Jones." The prizes are awarded annually on the report of the examiners in the National Competition of the Board of Education. Six prizes were offered for competition in the present year, and a bronze medal from the Society. The following are the successful candidates:—Robert McCoy, School of Art, Macclesfield; Berengaria Fildes, School of Art, Morecambe; Sydney Dale, School of Art, Macclesfield; Mabel L. Hinton, School of Art, Dudley; Evelyn Meggs, School of Art, Dudley; May Fenske, Polytechnic School of Art, Battersea. Five hundred and eighty-seven works were sent in for competition, showing an increase of 146 on last year, and the examiners state that the general level of merit is higher than then. They regret to find, however, that no examples of designs for furniture have been submitted.

Library, Clydebank.

Mr. James Miller, A.R.S.A., the assessor in the above competition, has announced the following awards: 1st (£50) Messrs. A. M'Innes Gardner and Robert White; 2nd (£30) Messrs. Stewart and Paterson; 3rd (£25) Mr. Charles Menart. All three architects practise in Glasgow.

Cottage Hospital, Skegness.

The premium (£15 15s.) in the above competition has been awarded by the assessor, Mr. Ernest R. Sutton, F.R.I.B.A., to Mr. F. J. Parkinson, of Blackburn. Those placed second and third and fourth respectively were: Messrs Moore and Archibald, of Middlesbrough; Mr. Josiah Auty, A.R.I.B.A., of Morley; and Messrs. Barrowcliff and Allcock, Loughborough.

LIST OF COMPETITIONS OPEN.

October 4. Houses, Easington.—The Easington R.D.C. invite plans for three types of houses, of which it is proposed to build 100 at Murton Colliery, Durham, in streets of 20, with 16 ft. back streets, 18 ft. frontage, and garden ground in front of each house to a depth of 30 ft.; an earth-closet and outside pantry to be provided for each house. Type A: 28 ft. gable, 3 bedrooms, 1 living-room, 1 sitting-room, scullery (offshot), with kitchen range and bath. Type B: 25 ft. gable, 3 bedrooms, 1 living-room, scullery, with kitchen range and bath. Type C: 2 bedrooms, 1 living-room, and scullery, with kitchen range and bath. The successful candidate will receive 2½ per cent. commission upon the net cost of buildings when erected. Plans must be sent to Mr. J. M. Longden, Council Offices, Easington, Castle Eden.

October 7. Baths Extension, Barnsley.—Barnsley Town Council invite drawings for a proposed extension of public baths in York Street and Race Street. Premiums, £50, £30, and £20. Particulars from Borough Surveyor, Manor House, Barnsley.

October 7. Housing Scheme, Evesham.—The Rural District Council invite competitive designs, with estimates of cost, for laying out a building site at Boadway, and the erection thereon of 30 cottages under the Housing and Town Planning Act, 1909. The architect whose design is accepted will be appointed to carry out the work at an inclusive fee of 5 per cent. nett, to include all travelling and other expenses. A block plan of the site and all necessary particulars may be obtained from E. H. Wadams, Clerk to the Council, Union Offices, Evesham, to whom applications, accompanied by a deposit of £1 1s., must be sent.

October 12. School, Coseley.—Designs are invited for a school to accommodate about 200 children. Particulars may be obtained from the Education Offices, Coseley, near Bilston.

October 14. Alterations to Hotel, Bristol.—Plans are required for alterations at the Grand Hotel. Particulars may be obtained from Mr. F. A. Jenkins, 44, Corn Street, Bristol.

October 28. Workhouse Extension, Salford. — Premiums £20 and £10. Limited to architects practising in Salfo and district. Particulars from Board Guardians, Salford.

October 31. New Town Hall, Mar lebone.—Premiums, £100, £75, and £5 Assessor, Mr. Henry T. Hare, F.R.I.B.

November 30. Technical Institut Cardiff.—The Cardiff Education Co mittee invite architects to submit co petitive designs and estimates for technical institute to be erected in Catha Park, Cardiff. Mr. J. S. Gibso F.R.I.B.A., has been appointed assessc Full particulars may be obtained fro John J. Jackson, Director of Educatio Educational Offices, City Hall, Cardiff, deposit of £2 2s.

November 30. Hospital, Hastings. The Joint Committee of the East Suss Hospital and the King Edward V Memorial Fund invite architects to su mit competitive designs, etc., for the pr posed new hospital. Mr. Edwin T. Ha F.R.I.B.A., of 54, Bedford Square, Lo don, has been appointed assessor. Co ditions and instructions may be obtain from Mr. W. M. Rhodes, East Suss Hospital, Hastings, on deposit of £1 Premiums of £125, £75, and £50 a offered.

January 20, 1912. Statue at Havan —Competition instituted by the Cub Government for the erection at Havana an equestrian statue of the Cuban Gene Maceo. Plaster models should be sent sculptors desirous of competing to "Comisión Ejecutiva, Monumento General Antonio Maceo, Secretaria de strucción Pública y Bellas Artes," Hava before January 20. The sum of 100,0 pesos (about £20,600) has been voted the work. British sculptors proposing compete should first put themselves i communication with the Commercial telligence Branch of the Board of Tra 73, Basinghall Street, E.C., where a further particulars (in Spanish) may seen.

July 1, 1912. City Extension Sche Dusseldorf. — Premiums £1,000 £375. Particulars from the Chief Bur master, Dusseldorf.

January 29, 1912. Governm Palace, Montevideo.—Designs are vited for a Government Palace and a to improvement scheme. Premiums: For former, £2,125, and £850; for the lat £1,060, £640, and £425. Conditions, e at the Board of Trade, 73, Basing Street, E.C.

January 31, 1912. Federal Capi City, Australia.—Competitive desi are invited by the Commonwealth Australia, for the laying-out of the Fed Capital City. Premiums are offered follows: 1st, £1,750; 2nd, £750; 3rd, £ Conditions, together with particul plans, and instructions, may be obtai at the office of the High Commissioner Australia, London. Designs must delivered by January 31st, 1912, to K O'Malley, Minister of State for H Affairs, Commonwealth of Australia.

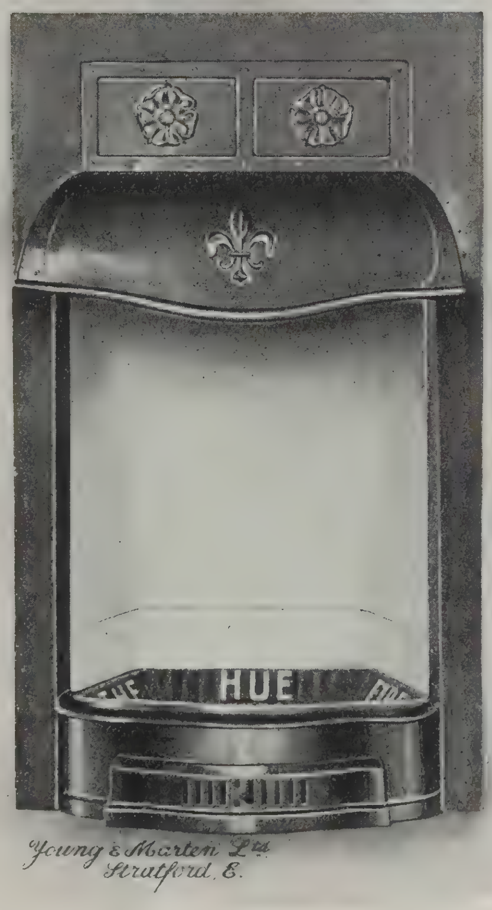
No date. Infirmary Extens Rochdale.—The Board of Managem of the Rochdale Infirmary invite ar tects practising in Rochdale prior January 1st, 1911, to submit pl designs, and estimates for extending present buildings. Conditions of c petition and instructions to architects gether with other information can obtained on application to T. E Kershaw, Secretary, the Infirmary, R dale. An assessor has been appointe

TRADE AND CRAFT.

An Adaptable Barless Fire.

With the departure of summer, and with the onset of chilly autumn days—foretelling the prospect of an unusually severe winter, the attention naturally turns towards means and methods of dispelling the cold. Since man is peculiarly susceptible of things that contribute towards his physical comfort, he is almost certain to demand, as a primary necessity, a cheerful fire. If, however, his fire-grate is found to consume an amount of fuel altogether disproportionate to its size, as a rapidly emptying coal-cellar will speedily attest, he will find it necessary either to decrease the amount of coal used, or to convert his extravagant grate into one which is economical. As the first proposal will assuredly operate to his personal discomfort, he, being a sensible man, will accept the alternative. This can easily be done by the aid of the "Hue" adaptable fire, which has been successfully substituted for many of the old-fashioned cavernous fire-grates that consumed an inordinate amount of coal, and gave no corresponding return of heat. The "Hue" adaptable fire, which is manufactured by Messrs. Young and Marten, Ltd., of Stratford, London, E., is of the barless type, the fire being low down on the hearth. If it is desired to instal a fire of this kind in place of an old one, the substitution can be conveniently performed with very little trouble and at small expense. The "Hue" fire is manufactured to suit the base areas of existing grates, and, to secure a proper fit, it is only necessary to supply a paper template of the bottom of the present gratings.

This fire can also be supplied complete in a self-contained form, with canopies, if necessary, and in various finishes. One of this type, the "Lancaster," is used in illustration of this note. They are also manufactured with overmantels, many tasteful designs, at varying prices, being included in Messrs. Young and Marten's descriptive brochure. The "Hue" fire is suitable for hotels, offices, waiting-rooms, and dwelling houses, is clean, economical, and efficient in use, and will burn for from three to four hours without attention.



THE "HUE" FIRE.

THE TREATMENT OF HOSPITAL WALLS.

The best treatment for the walls of hospital wards is discussed in the current issue of "The Hospital." Our contemporary says: "In a previous series of articles the finish of the ward floor was fully discussed; the conclusion arrived at being that the best type of material for a ward floor is a composition of asbestos, sawdust, etc., with a lime matrix, coloured with mineral oxide. This composition will finish against the wall with a cavetto or rounded skirting for the wall finish to stop on and to avoid dust-holding angles. The nature of this material is such that it can be made in many colours and is applied more or less in the same manner as cement. It can be applied as a wall finish, giving an open field for any manner of decoration; but owing to its composition it has a tendency to bulge from the wall unless great care is taken in the setting, and its cost is considerably greater than other materials which give an equally good result.

"Glazed bricks have in past years been used for ward wall linings, and have the advantage that there is no discoloration from damp; efflorescence when present can be easily cleaned off, but even with the best quality of work and material it is almost impossible to avoid uneven joints which may harbour dust. The same objection applies to tile linings, though in a lesser degree; they have the advantage, however, of lending themselves to a more cheerful colour scheme than glazed bricks. But the cost is against wall tiling also, as the cheapest work costs about 8s. a yard. The condensation of moisture on such surfaces as brick or tiles is a serious drawback to their use.

"Portland cement and Keene's cement are still greatly in favour as a wall finish; the brickwork should be as dry as possible before they are applied, else stains will come through. These cements now have keen competitors in the several new plasters which have recently come forward, and one of them we believe is specified for use in the new King's College Hospital. They compare favourably in price with Portland or Keene's cement, are hard and non-absorbent, and further have the desirable quality of setting and drying very quickly. . . .

"The surfaces being plastered and the moisture gone therefrom, the architect or his client must determine the scheme of decoration. Much is to be said in favour of a good quality varnished paper, which will last some ten or fifteen years if varnished with the best white copal varnish: the surface presented is hard, dry, non-absorbent, and practically impervious.

"Many authorities favour painting on the plaster with some of the excellent paints and enamels now on the market. Paint gives scope for the individual ingenuity of the architect, and should be four-coat work, with two coats of varnish or one of enamel. In addition there are water paints, while fresco painting can be carried out to give an effective appearance within reasonable cost if treated in a broad and simple manner."

LONDON MASTER BUILDERS' ASSOCIATION.

A council meeting of the London Master Builders' Association was held at Koh-i-Noor House, Kingsway, W.C., on Thursday, September 21st, the president, Mr. G. Bird Godson, being in the chair.

The minutes of the last ordinary council meeting, together with those of the special council meeting held on the 23rd ultimo, of the special committee meeting, the report of the Conciliation Board meeting, and the report of the Finance Committee, were read and confirmed. Several matters from the National Federation were considered and the question of National Insurance and Unemployment was discussed. Attention was drawn to instances of intimidation during the late strike and to the obvious evils attending peaceful picketing. The following new members were elected and nominated: Elected as Ordinary Member, Messrs. W. Moss and

Sons, Ltd.; Associate Members, Messrs. Smeed, Dean and Co., Ltd., and Messrs. Lawford and Sons, Ltd. Messrs. The Metropolitan Asphalte Co., Loosley and Sons and F. A. Clark and Son were nominated as Associate Members.

NEWS ITEMS.

Change of Address.

Mr. Campbell Jones, F.R.I.B.A., lately of 32, Bedford Row, W.C., has moved to more convenient offices in Skinners' Hall, 9, Dowgate Hill, Cannon Street, E.C.

The Usher Hall Decorative Scheme.

It has been decided that the internal decorative treatment of the Usher Hall, Edinburgh, shall be in Siena marble, Roman stone, and bronze. For the exterior selected sculptors will be asked to submit competitive models.

The Tattershall Castle Fireplaces.

A newspaper correspondent, referring to the exportation to America of Tattershall Castle, suggests that unless a Bill is passed making it illegal to export, or sell for export, any historical building or national monument, it may soon be impossible to see Stonehenge, the Roman Wall, or Fountains Abbey, without a visit to the United States.

A Large "Brilliant" Sign.

The Brilliant Sign Co., Ltd., have just secured an order from Frosts, Ltd., of Liverpool, to replace an incised wood facia with their modern concave brilliant metal letter process, the sign measuring 225 ft. by 2 ft. 6 in.

Sheffield University New Wing.

The foundation stone of a new wing for the applied science department of the Sheffield University was laid recently by Judge Denman Benson. Messrs. Gibbs, Flockton, and Teather are the architects of this addition, which is estimated to cost about £40,000.

London's New County Hall.

Another stage in the erection of the London County Hall on the south side of the river, next Westminster Bridge, has been reached with the completion of the foundations. Work has now been commenced on the sub-structure of the building, which, rising to ground floor level, is estimated to cost £104,000.

New Public Buildings, Burslem.

The above buildings, erected at a cost of £35,000, have now been opened. The upper part of the buildings consists of a large central hall having a floor space of 65 ft. by 84 ft., and being provided also with a balcony capable of seating 2,000 people. There is also a smaller hall accommodating 500 people, and fitted with a special floor for dancing.

A Bridge Substitution.

An interesting example of bridge engineering has been carried out on the Midland Railway at Sheffield, where a bridge weighing about 120 tons was moved and a new one of 150 tons installed in its place in 25 minutes. Only 10 men were employed on the work. The bridge crosses Princess Street, Brightside, and is on the main line from Sheffield to Rotherham and the North. The new bridge is of steel and has been erected by the Butterley Co., Ltd., of Derby. It was built on gantries at one side of the old span, and coupled to the latter, the combined weight of the two resting on steel bogies. The moving of the bridges was carried out by means of two large hand winches, hydraulic jacks being used to drop the ends on to the supporting masonry.

Renovation of Whitgift Almshouses.

The Whitgift Almshouses, Croydon, which, as our readers are aware, were recently, with much difficulty, saved from threatened demolition, are now undergoing careful external renovation, special treatment being adopted where necessary for the arrest of decay.

Institute of Sanitary Engineers.

The Institute of Sanitary Engineers will hold its opening sessional meeting at Caxton Hall, Westminster, on Monday next, October 9th, at 7.30 p.m., when the president, Mr. A. J. Martin, M.Inst.C.E., etc., will deliver an address on the programme for the session. Admission tickets (free) and any further information may be obtained on application to the secretary at 120-122, Victoria Street, S.W.

Secondary Schools, Harrogate.

The above schools were opened by the Bishop of Ripon on September 28th, the original building having been remodelled and an extension, costing about £8,500, erected. The buildings now consist of four floors. The total cost of the complete block has been about £13,000. The architects for the extension were Messrs. W. J. Morley and Son, of Bradford, who were also responsible for the original building.

"Cassell's Building Construction."

The first part of "Cassell's Building Construction," by Professor Henry Adams, M.Inst.C.E., has just been issued, price 3d. net. It is to be completed in 24 weekly parts. The work comprises notes on materials, processes, principles and practice, and includes numerous drawings and twelve coloured plates. The publishers are Messrs. Cassell and Co., Ltd., Ludgate Hill, E.C.

A Large Hospital Scheme.

The old Hotel Dieu at Lyons is to be superseded by a new hospital occupying some forty acres. The estimated cost is stated to be £200,000. Special extensive laboratories are planned adjoining the university clinics, and a section for contagious disease, with individual isolation, will be on the model of the Pasteur Hospital. Accommodation will be provided for 1,300 beds. A special commission of architects, physicians, and surgeons are considering the details.

"Preservation" Work at Glastonbury Abbey.

Concerning a newspaper reference which might have conveyed an erroneous impression as to the character of the work that is being carried out at Glastonbury Abbey, a newspaper correspondent claims that the work is essentially preservation, not "restoration." Most valuable portions of the ruins, giving exact date of the various transitional periods of architecture, would have been irretrievably if supporting masonry had not been to keep them from falling. Every stor being carefully put back into its orig position.

Doncaster Housing Scheme.

The Local Government Board has proved of the sites submitted to them the Corporation of Doncaster for the e tion of workmen's dwellings in compe tion for those demolished in the cleara for the Marshgate Bridge. It is prop to build 60 houses at Warmsworth, 5 Carr House and Elmsfield, and a sma number not yet determined in Whea Lane; the estimated cost of the sch being between £36,000 and £40,000. Borough Surveyor is preparing the pl

A New Stone Roof at St. Alban's Ab

The project for the substitution in Albans Abbey Church of a stone groi roof to the north aisle for the plain roof that now covers it has been pla before Mr. J. Oldrid Scott, who has pared plans and drawings and an estim amounting to £4,500 has been given. Dean of St. Albans is chairman of a c mittee that has been appointed for ca ing out the project, and subscript amounting to over £1,000 have already received, including one of from Lord Salisbury.

Suggested Garden Suburb at Hasleme

A scheme is on foot for the formatio a garden suburb at Haslemere. It be on co-partnership lines, but for reasons the scheme will not be carried in connection with the Co-partner Tenants, Ltd., but under the auspice a local committee. It is stated that scheme will cover six acres of land, trally situated, through which a roa being made. It was first suggested 62 houses should be built, but this num has been reduced to fifty, the additi land to increase the garden spaces.

The Public Trustee's Department.

The green lawn situated upon the ment's Inn extremity of the Law Co is, for perhaps two years, to be occu by a wood and iron building which shortly be erected to accommodate the creasing business of the Public Trus department. Plans are already in for the new offices of the Public Tru in Sardinia Street, but so great is the pansion of the department that acc modation is already needed to supplem that offered by the 62 rooms now a disposal in the premises at Clement's

Frederick Shields Memorial Exhibiti

The friends of the late F. J. Shie A.R.W.S., who died last May, arranged an interesting Memorial Exh tion of his works at the Alpine Club lery, Mill Street, Conduit Street, where drawings, pictures, cartoons glass-painting and decorative work shown. Shields, who was a contempo and friend of Rossetti, Madox Brown, Swinburne, has left his own memori the series of decorative religious paint executed for the Chapel of the Ascen in the Bayswater Road. These pict done in oil or "spirit-fresco," were c missioned by the late Mrs. Russell Gu some 20 years ago, and Shields worke them incessantly to the very end of life.

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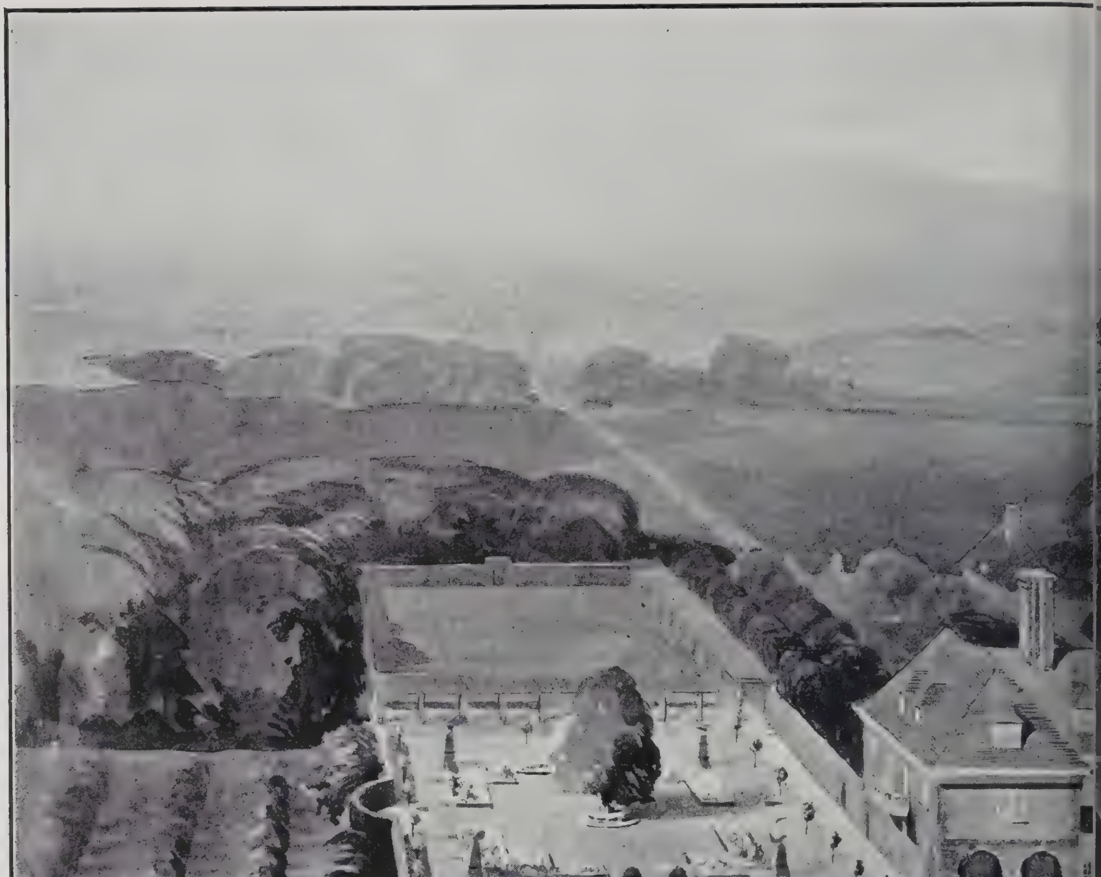

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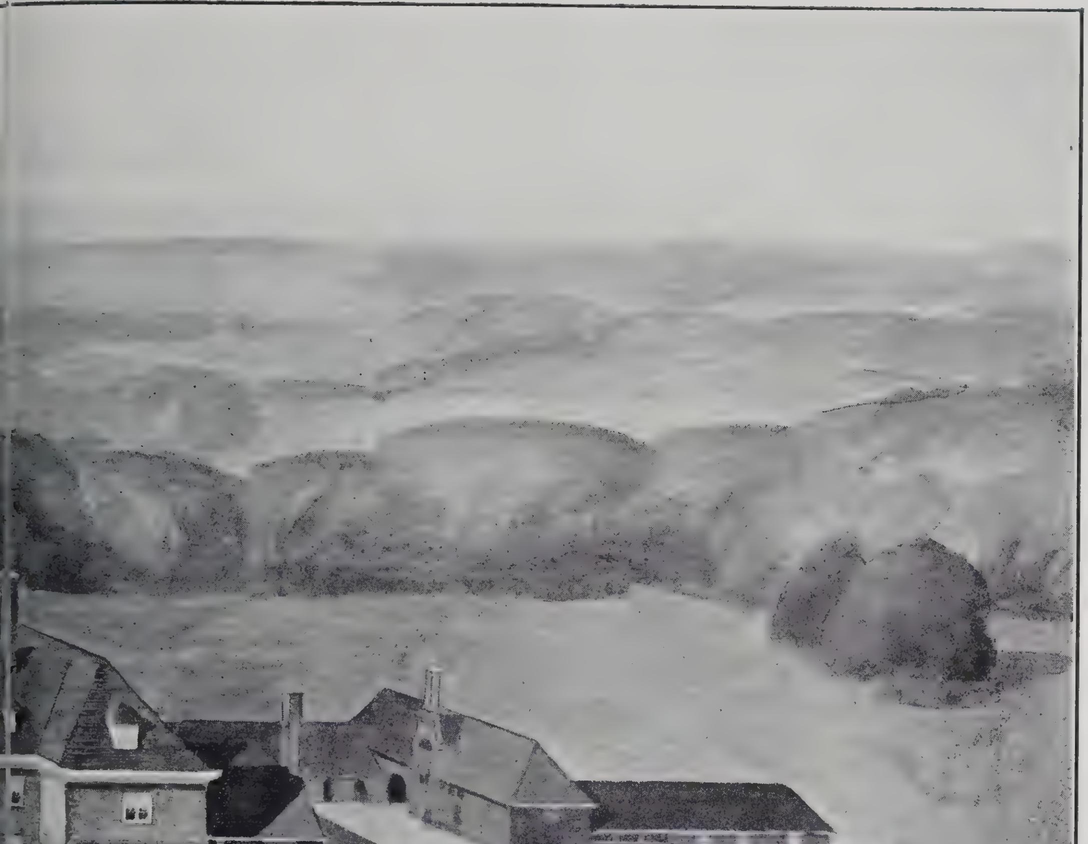
HOUSE and GROUNDS
at BERKHAMSTEAD
View from South
Ernest Gimson

CHITECT.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

WEDNESDAY, OCTOBER 11th, 1911.

Volume XXXIV. No. 872

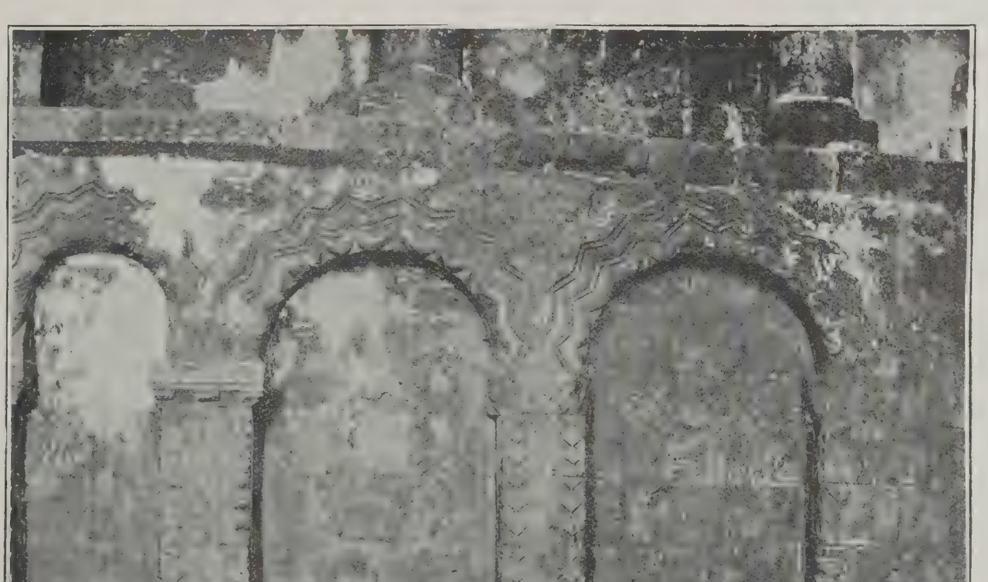
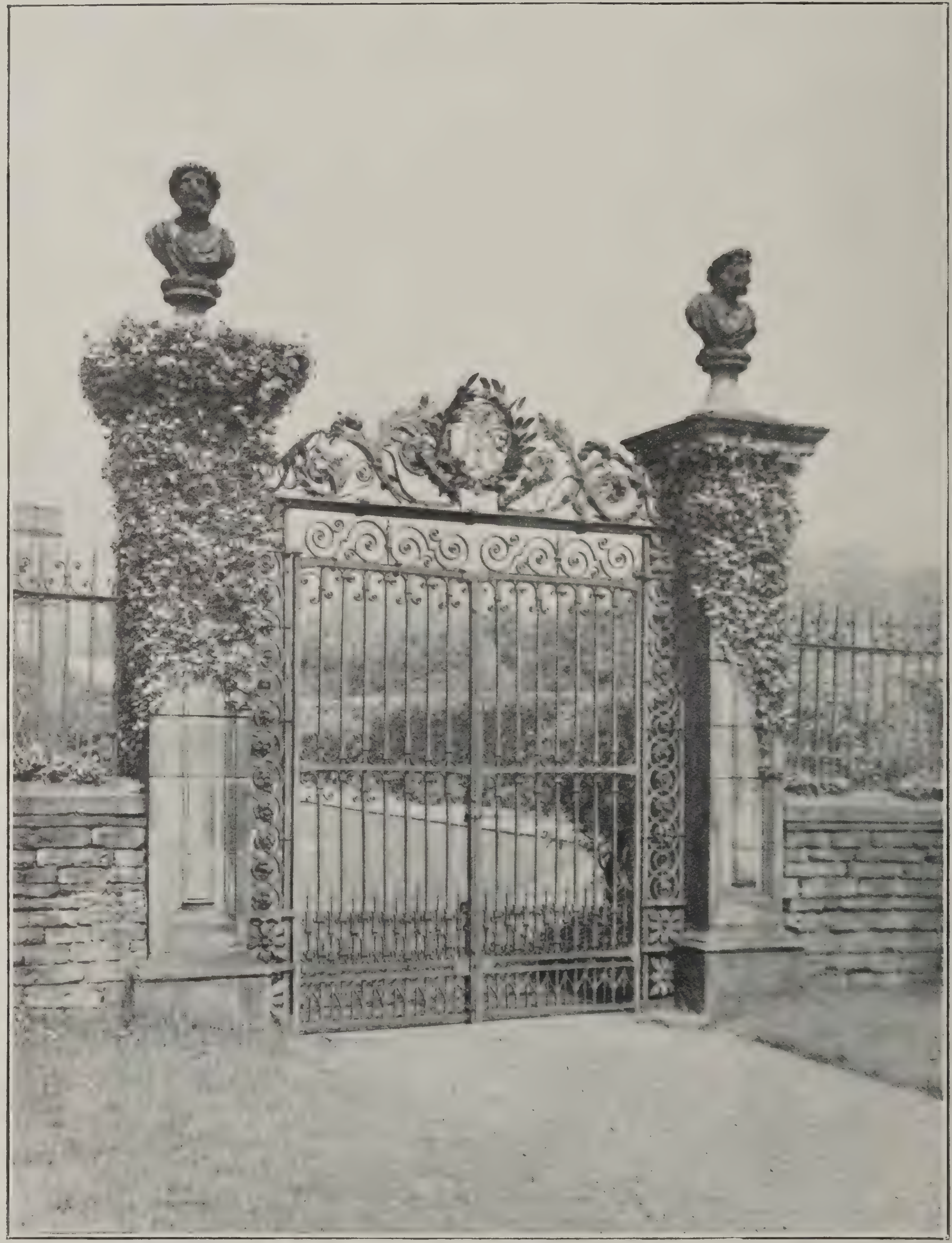


FIG 7. WALL ARCADE, CORMAC'S CHAPEL.

(See page 375.)



Particulars of these gates are given on page 384 and a measured drawing on page 385 of this issue.

WROUGHT-IRON GATES AT BEAUCHIEF HALL.

THE ARCHITECTS' & BUILDERS' JOURNAL.

OCTOBER 11th, 1911. CAXTON HOUSE, WESTMINSTER. VOLUME 34. No. 872

NOTE : The List of Contents will be found on page IV. of the front advertisements.

me Constructional Features of Irish Ecclesiastical Architecture.

WHAT is the use of troubling about such a subject ? " may perhaps be the reflection, uttered or not, of the English architect engaged in building churches in England for modern use ; " England is not Ireland, and in any case the special interest of the ecclesiastical remains of Ireland lies in the past, hile we are concerned with the present." Well, though there as no doubt been a great deal too much archæology mingled ith the modern practice of architecture, we do not think that yone who really cares for architecture, as an art and not erely as a business, should regard any chapter of its past evelopment as without interest ; and Irish ecclesiastical re-ains have this special kind of interest, that they take us back most to the crude beginnings of architecture. The earliest the diminutive stone churches of Ireland, though they are ter in chronology than most of the English Saxon churches, e even more primitive in architectural conception ; church chitecture began at a later date in Ireland ; and as the early urches were of monumental structure, with thick walls and ostly stone-roofed, a great number of them still exist in an telligible state of preservation. It is interesting to look at e beginnings of things occasionally, and to notice from hat small models the later mediæval church developed. oreover, some of the later Irish Gothic offers suggestions hich might still be of service to the modern church architect the look-out for new inspirations.

Mr. Champneys's large and copiously illustrated book* serves to bring the subject before us in a tolerably comprehensive manner. Perhaps nothing could be more typical of the early (though not the very earliest) forms of Irish ecclesiastical architecture than the building at Kells known as "St. Columba's House" (Fig. 1), which seems to have been a chapel and a small monastery in one, the chapel on the ground floor, the monastery above. Here we seem to start with the primitive elements of architecture—four thick walls enclosing a space, and a high-pitched roof in one simple ridge and slope. Yet this primitive-looking building, erected probably about 800 A.D. or a little later, contained in its lower vault a method of construction, or a principle of construction, which foreshadowed a modern practice, for it was an approximation at least to the idea of a homogeneous concrete roof. The aggregate, it is true, was in large stones and was roughly erected first in the form of a crude arch, after which liquid mortar was poured over and into it ; but the statical result was the same, the vault became a homogeneous mass with practically no thrust ; and it is stated that this method of vault construction remained in use in Ireland till as late as the sixteenth century. Fig. 2 shows the section of one of these roughly built vaults, over the transept chapel at Hore Abbey, attributed to the thirteenth century. It is rather odd to read that this Irish roof construction has been compared to that of early Syrian churches before the seventh century ; but in fact, though the outward appearance of the sloping stone roofs may have been somewhat similar, the Syrian roofs were in general composed of large slabs supported by arches at

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*Irish Ecclesiastical Architecture, with some notice of similar or related work in England, Scotland, and elsewhere. By Arthur C. Champneys, M.A. London : G. Bell and Sons.

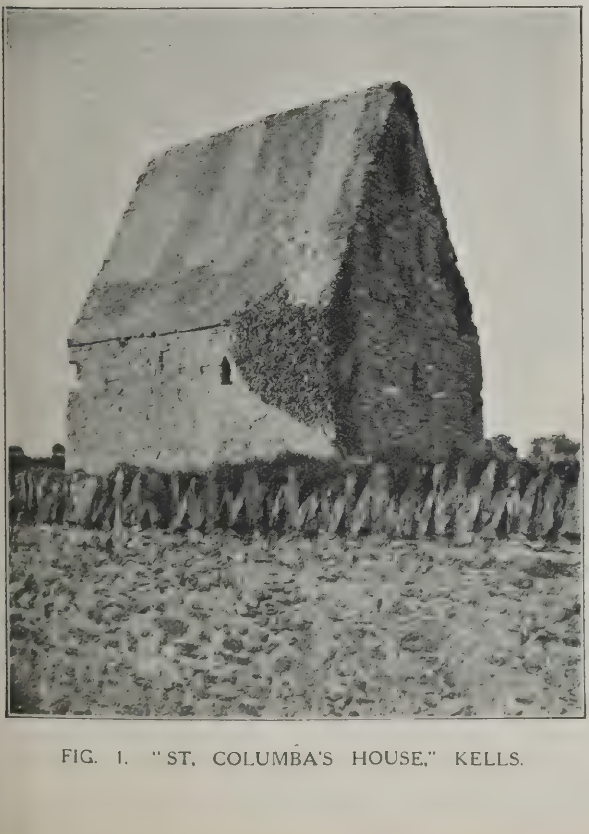


FIG. 1. "ST. COLUMBA'S HOUSE," KELLS.

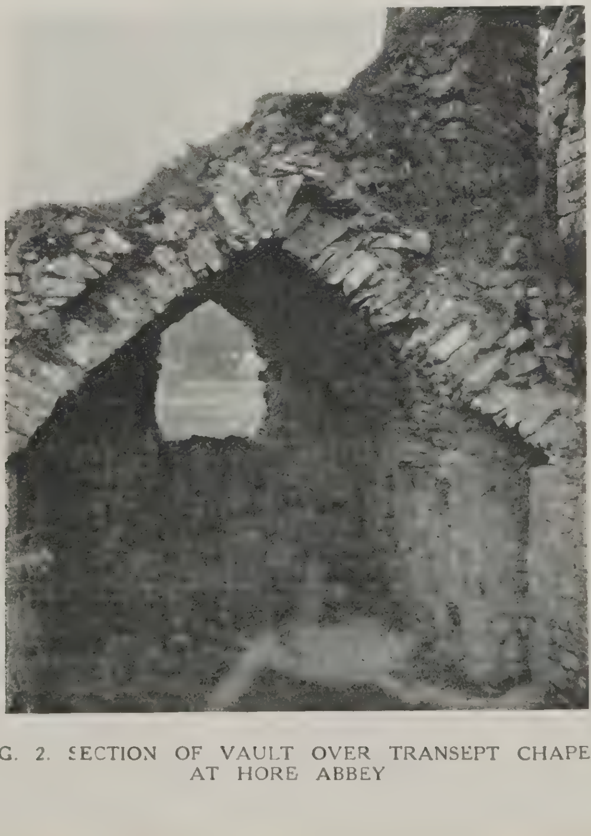


FIG. 2. SECTION OF VAULT OVER TRANSEPT CHAPEL AT HORE ABBEY

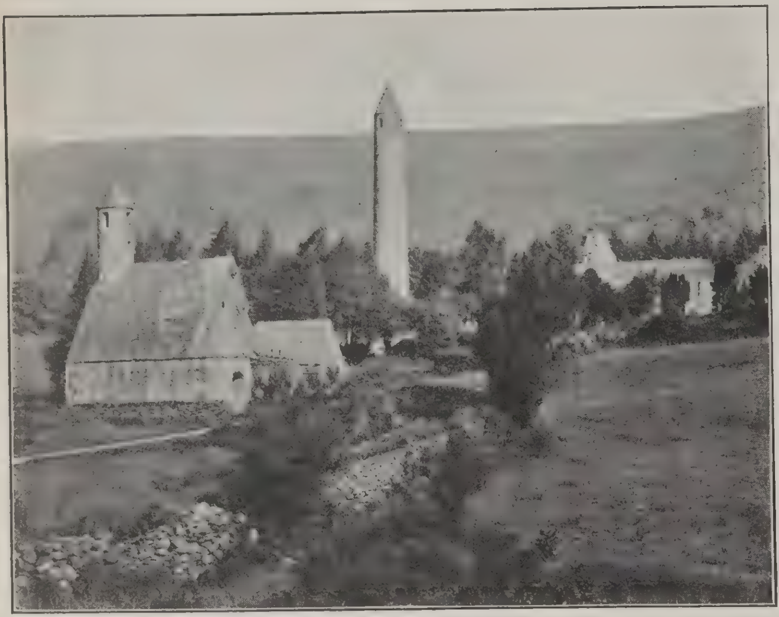


FIG. 3. GLENDALOUGH.

regular intervals; a method still worth considering as among the means of producing a monumental roof in masonry, which should appear part of the building and not a covering of another material laid on it. There is a good deal still to be done in the direction of monumental roofing, and any suggestions from ancient architecture are worth bearing in mind.

No feature has been supposed to be so characteristic of Irish architecture as the numerous round towers, some of them still retaining their original conical roofs; but these were for a long period by no means thought of as connected with ecclesiastical architecture. There were wild theories about them; they were of immense antiquity; they were Pagan; they were Druidic, and so on. All this rubbish may now be said to be cleared away, and it is recognised that the round towers were connected with ecclesiastical foundations. Why they were round is not so easy to determine. Small round church towers occur frequently in Norfolk and Suffolk, but these are in the flint-building districts, and the round form was obviously chosen to evade the trouble of finding and fitting angle quoins for a flint rubble walling. In Ireland there was plenty o stone, and the building of a circular wall in masonry is more difficult than building walls at right angles (that was why the Saxon churches nearly always had a square chancel and not a apse). Either there was some precedent for the form, which we have lost sight of, or it may have been supposed that the round tower was stronger against attack than a square one For the Irish round towers were no doubt in part intended a refuges against sudden attacks; the fact that most of them have their doors several feet from the ground is in confirmation of that idea; but that is no argument against their being connected with ecclesiastical establishments. When the inhabitants of a convent were in constant danger of being harried or butchered by a band of marauding Danes, the need of stronghold for temporary refuge was obvious enough. A towe was in fact a traditional place of safety in other countrie than Ireland. In the early middle ages of Italy every smal town had its "flock of steeples," marking the houses of th leading families, who could defend themselves in the towe when at the last gasp; some eight of those in San Gemiguan still remain. So that it was really quite a natural result tha where there was a convent and a church there should be round tower, and that where we now find such a tower th remains of a church will not be far off. The view of Glendalough (Fig. 3) shows the whole grouping; the oratory, th remains of the cathedral in the distance, the round towe between them. The smaller round tower projecting throug the roof of the oratory was a later addition, supposed to hav been only for bells (the uppermost floor being pierced for th ropes). In the view of the tower and church of Teampul Finghin (Fig. 4), probably of the eleventh century, we see th church and the round tower in direct structural connection an undoubtedly built together.

Considering these obvious facts, it is strange that such mystery should have been made for many years of these Iris towers, which in fact are no more mysterious than an Italia

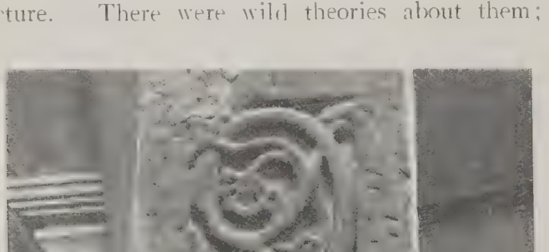


FIG. 5. DETAIL OF RUTHWELL CROSS.

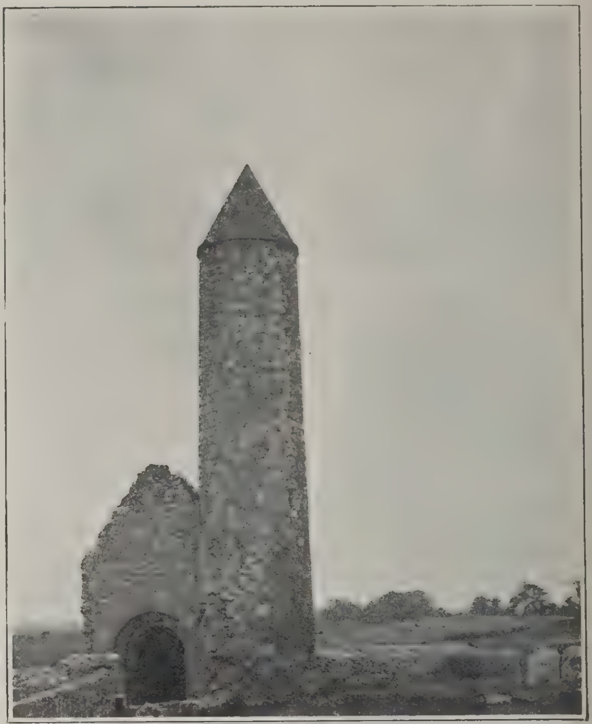


FIG. 4. TOWER AND CHURCH, TEAMPULL FINGHIN.

mpanile; but archæologists rather delight in mystifications
this kind. To the modern church architect the Irish round
vers may have another interest, for they present him with a
w and (in England) unworked idea, at least in connection
th churches. The Italian form of campanile suggested the
ver of Westminster Cathedral; the Irish form of round tower
y suggest a new combination to the English church archi-
t wishing for some variation from the orthodox tower and
re. The Irish round tower generally was windowless, ex-
ot for some very small openings; till the top storey was
ched, where there might be two or more windows of
derate size. This hint might be carried out further, re-
lting in a severely designed round tower with an open lantern
ge at the top, in which, if it were used as a bell-tower, the
ls could be visibly hung. There is certainly the making of
ew element in church architecture in the idea, and it is no
re unsuitable to transplant a type of tower from Ireland
n from Italy.

The grand type of memorial cross of which so many examples
found in Ireland has long received the general admiration
architects, and has not seldom constituted the *motif* for a
ss erected on English or on Scottish ground. It is in connec-
n with these crosses that one is struck, more than in any
er architectural product of the country, with the peculiarly
zantine type of ornament which frequently makes its appear-
e in Irish work. The vine-pattern from the Ruthwell
ss (Fig. 5) is an example which might pass for rather rough
zantine work. In other classes of detail there is a strange
ngling of elements which seem to come from different

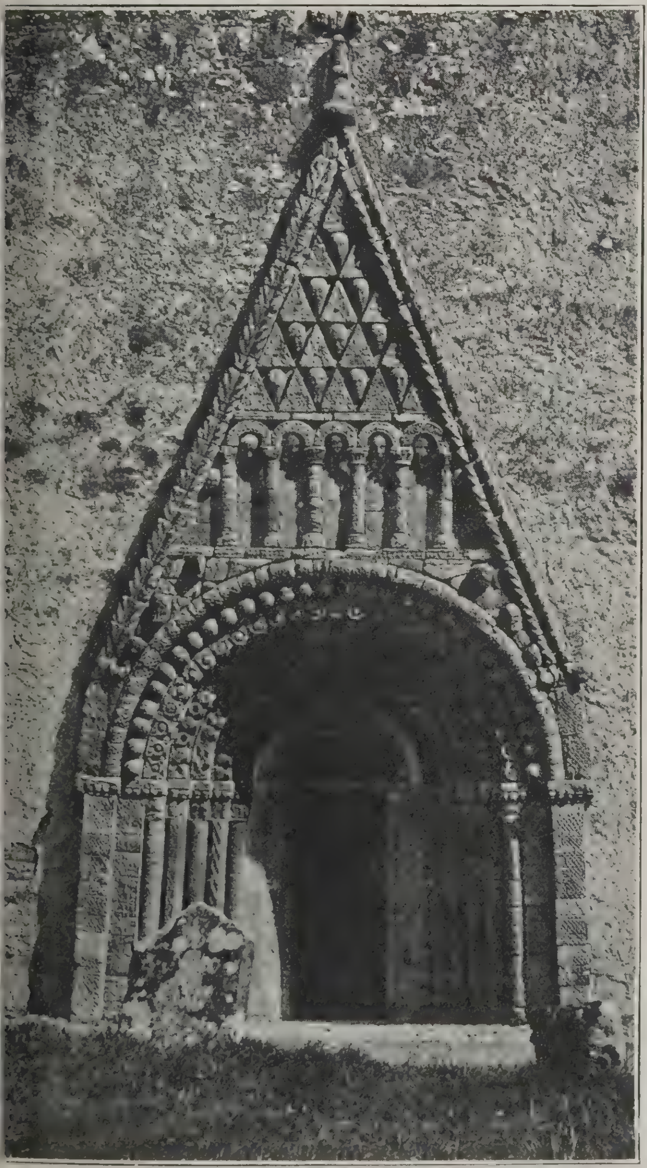


FIG. 8. WEST DOORWAY, CLONFERT CATHEDRAL.

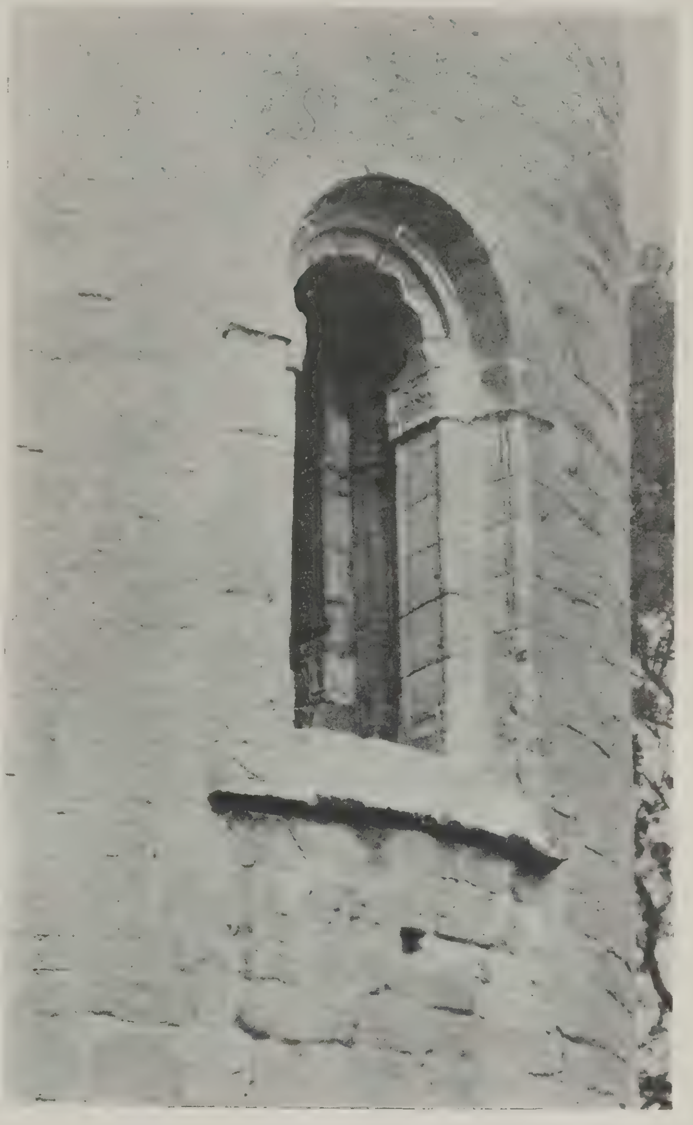


FIG. 6. DOORWAY IN ROUND TOWER, TIMAHOE.

quarters of the architectural compass. Look at the doorway from the round tower of Timahoe, for instance (Fig. 6), where we have the Norman zigzag in the arch, the Romanesque angle shafts in the jamb, and then a flat carved capital which looks quite eastern in its origin. Occasionally these singularities of Irish work suggest new combinations out of which something more might be made. The wall-arcade from Cormac's Chapel, for instance (Fig. 7, p. 371), which in its general outlines and proportions seems a Romanesque arcade, shows us, in combination with the zig-zag ornament in the arches, the treatment of the flat piers with a varied diaper ornament, crudely used in patchwork here, but a method of treatment which is suggestive enough, and might be carried out with great effect, on the same principle, in modern church work. But perhaps the most striking instance of the peculiar and exceptional character which Irish Romanesque (for so we must call it) may take on is found in the west doorway of Clonfert Cathedral (Fig. 8), the nationality of which would puzzle anyone who had been brought up on French and English Romanesque. It seems at first sight almost impossible that such a thing should be found in the architecture of our western isles. The sloping outward of the jambs, it may be observed, is a survival from a similar treatment of doorways in some older and less elaborate Irish buildings.

The later Gothic of Ireland fell, not unnaturally, more into line with that which was being carried on in England, though not without its startling peculiarities here and there, as in the case of the remarkable and very effective Perpendicular window in the transept of Limerick Cathedral, with its series of uncusped tracery arches, one above the other, filling up the space

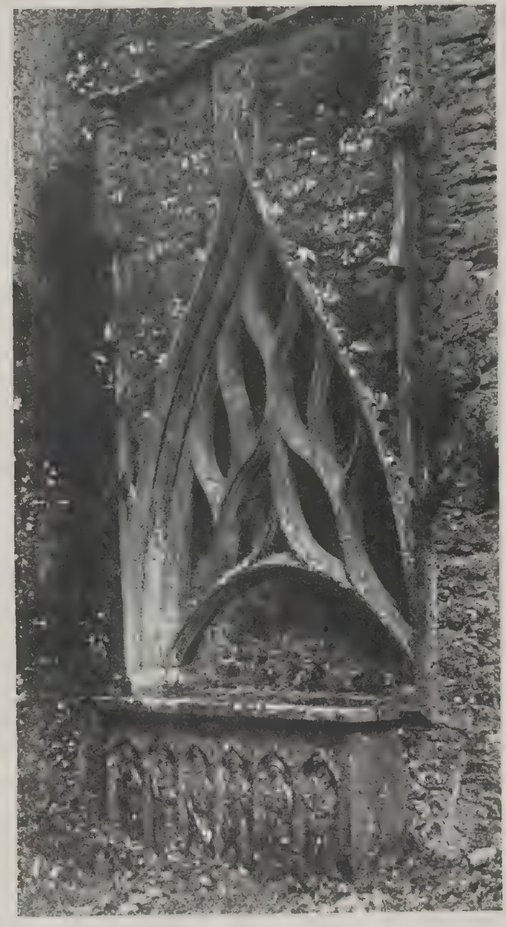


FIG. 9. TRACERY OVER TOMB AT KILCONNELL ABBEY.

between each mullion from the springing line to the intrados and crown of the arch. On the other hand, strangely enough, over a tomb recess in Kilconnell Abbey we come on a piece of perfectly French flamboyant tracery (Fig. 9). It would be very interesting to know what was the date of this piece of work; it is one of the little defects in Mr. Champneys's book that he does not deal in dates much. In the earlier Irish work they are probably difficult to discover with certainty, but the later buildings it should have been possible to date without much difficulty.

Irish church architecture, it must be admitted, is a very peculiar chapter in architecture, which is worth attention for its own interest, and which may afford new suggestions and ideas to the modern English architect.

The Old Master and the American Millionaire.

LORD CURZON, at the opening of the exhibition of Old Masters at the Grafton Galleries last week, took occasion to deal with the question of national art treasures being purchased for removal abroad, point to his remarks being given by the recent transactions over the Castle Howard Mabuse and the Tattershall Castle fireplaces. Lord Curzon said that no other country had private art collections to be compared to ours, this being due chiefly to the fact that in the eighteenth century the young English nobleman's education was considered incomplete without the "grand tour," and the grand tour incomplete without the purchase of works of art. Unfortunately, England was not now the great buying country, but the great selling country—the happy hunting ground of the foreign connoisseur, and, above all, of the American millionaire. Whether the American millionaire's motives were personal and selfish or patriotic, his wealth made him irresistible; while our capacity for resistance was diminished by the enormous burden of taxation levied by the State. One hundred thousand pounds was no uncommon price for a great picture now. It no longer gave us a shock to hear of a picture or castle about to be spirited away. And the situation wo get worse. The number of available masterpieces was v restricted, while the purchasing power of the United Sta was likely to increase; and the American buyer was no lon satisfied, as he was twenty or thirty years ago, with the cle fakes now in the Metropolitan Museum and other New Y collections. Our present methods of meeting the situat were hopelessly obsolete and inadequate. The fund in wh interests the present exhibition was held had to appeal o and over again to the same donors, whose number was limit This could not go on for ever. Many desired a law like t of Italy prohibiting the export of such works of art. W there was much to be said for it. But the works compulso retained in Italy were Italian works, a part of the natio heritage. The Old Masters we wanted to keep had chi been brought here by the same process of "spoiling the Eg tians" from which we now suffered. If his great-gre grandfather in 1760 had bought a Rembrandt or Hals Raphael, it was rather hard to say that the purchaser's gr great-grandson must not sell it now. Such an encroachm on individual liberty would not be tolerated by public opin or Parliament. Another proposal was that the State sho earmark for the purchase of works of art the money dra from their taxation. That seemed just; but it would be difficult to ascertain what part of the national revenue was collected, and there would also be great difficulty in defin a "work of art." The real taxation would be found i much more frank recognition by the Government of its obli tions. He would like to see £25,000 a year voted for National Gallery, instead of £5,000. The money sho not be rashly or indiscriminately spent, and if in any y pictures justifying such expenditure were not forthcomi the money should be accumulated. It was proposed that official register should be compiled of all great works of in the country; but unless the Government had an option right to purchase, such a register would only help the foreig to find our treasures.

The Rebuilding of Regent Street.

WITHIN ten or twelve years all Regent Street will h taken on a new face; Oxford Circus and Piccad Circus will both be renovated almost out of reco tion; and neighbouring streets will have undergone a sim transformation. Regent Street is Crown property, like Piccadilly from the Circus to a point short of Sackville Str As the Crown leases fall in, the old property is being pu down and new premises are taking their place.

Regent Street is nearing its hundredth birthday. W the Crown, in January, 1811, re-entered into possession of land known as Marylebone Park, an Act of Parliament obtained to form a public park there and to build on ground adjoining it. The plans were made by John N the favourite architect of George IV., who obtained the mium of £1,000 offered by the Treasury in 1793. (The p was, of course, christened later the Regent's Park.) T on July 10th, 1813, an Act was passed for "making a m convenient communication from Mary-le-bone Park and northern suburbs of the Metropolis in the Parish of St. M le-bone, to Charing Cross within the Liberty of Westmins and for making a more convenient sewage for the same." was the origin of Regent Street. It was designed by N and took seven years to complete. Nash's design had particularly striking feature—the Quadrant at the eastern extending from Glasshouse Street to Piccadilly. The arc covered the whole footway and was supported by 145 cast- pillars. It was removed in 1848, the principal reason fo sacrifice being the objection of shopkeepers that, by darke the footpath, the colonnades were an obstacle to business. the south side, of course, Mr. Norman Shaw has set up a model with the Piccadilly Hotel, and Mr. John Murray produced his designs for the rebuilding and alteration

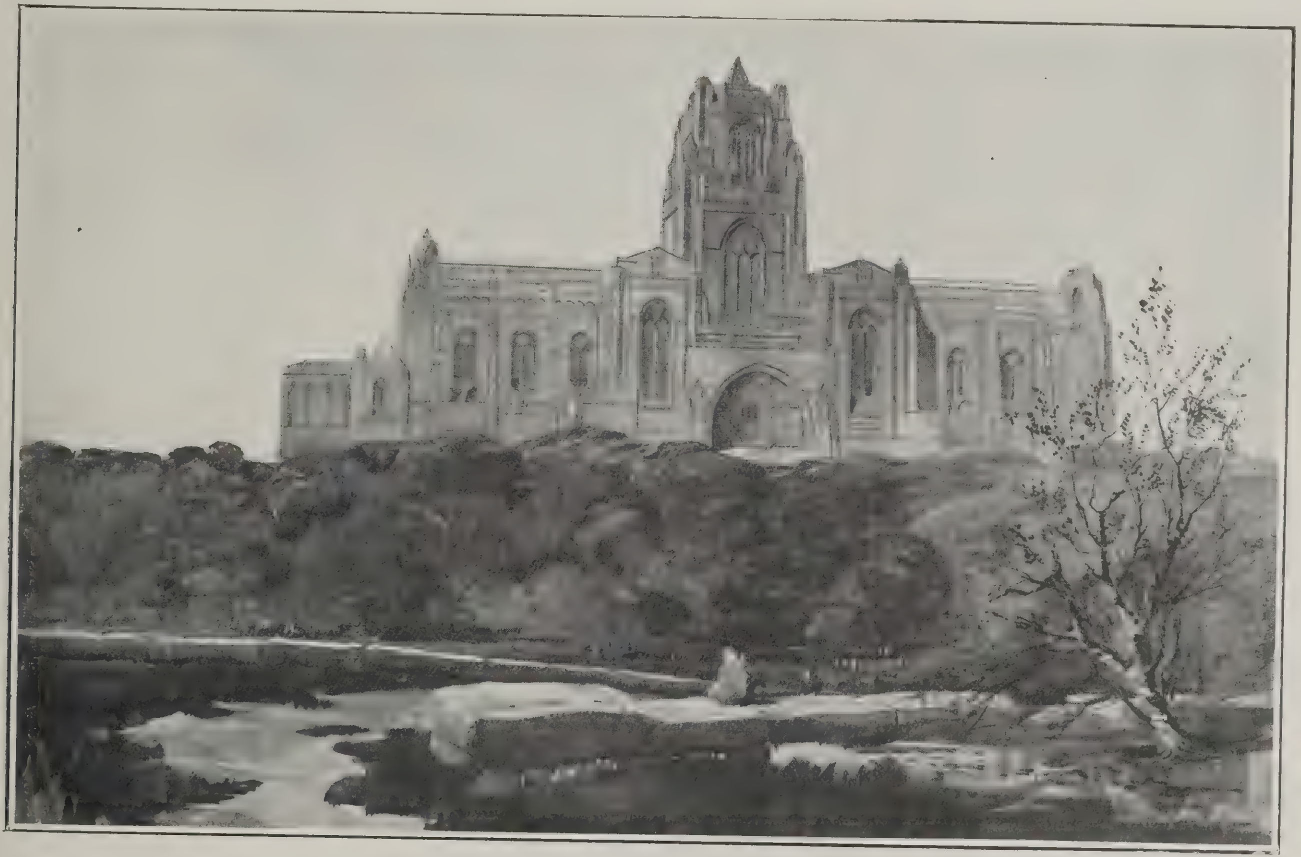
Piccadilly Circus (already illustrated in this Journal); while further up the street Mr. Frank T. Verity has erected a portion of what will eventually be a great new front extending south from Conduit Street, and has put a similar façade to the new Polytechnic. Lastly, Mr. Henry Tanner has produced a very fine design for the rebuilding of Oxford Circus, which has been approved by the Crown authorities. The first segment of the new Oxford Circus is now being built—the south-east—and the others will be carried out within the next eight years, as opportunity offers.

An Exceptional Professorship.

THAT the study of Architecture is held in high esteem at the American universities is evident from the fact that Professor Duquesne, winner of the Prix de Rome at the Ecole des Beaux-Arts, Paris, has been appointed Professor of Design at Harvard at a salary of £3,000 a year. Two points in this connection call for special mention: first, that never before has a Prix de Rome winner been thus secured for a rofessorship, and, secondly, that the ordinary salary of a rofessor at Harvard is £1,000 a year. It is obvious therefore at the university authorities consider the teaching of architecural design to be of the greatest importance, and in order to ecure the best possible man they have offered a salary which s quite exceptional. The money has been provided, we believe, y Mr. Guy Lowell, brother of the president of Harvard. At time when the London County Council has been endeavourng, without success, to get a director of their Central School f Arts and Crafts at a salary of £1,000 a year, the foregoing nnouncement is of particular interest. Professor Duquesne, e understand, is at present in this country learning English, nd will take up his duties at Harvard in the course of the resent month.

Liverpool Cathedral.

THE perspective view of Liverpool Cathedral as now intended, which we reproduce on this page (by courtesy of the "Liverpool Daily Post"), serves to give an idea of hat will be its ultimate effect. While we approve the addition of the large central mass, we regret the abandonment of the two north-end towers, which might yet be added, if funds permitted and a further revision of the design were undertaken. Meanwhile the central mass has undoubtedly a grand effect, and possesses the merit also of a certain novelty of line and composition, instead of being a mere replica of the usual type of mediæval central tower. It seems necessary to insist on this point, since we observe that a letter in the *Liverpool Courier* by a person who signs himself "Interested" sets up the complaint, which we always hear in these cases, that "the new cathedral will probably stand unrivalled in ugliness"; which means that it is something different from what he is accustomed to. There are a number of people in England who always think that anything is wrong in architecture which is different from what they are accustomed to see. Westminster Cathedral is one of the most universally admired modern buildings, yet while it was in progress a protest against it was actually got up in a well-known magazine on account of its extreme and unpardonable ugliness; and this kind of protest against the Liverpool Cathedral seems to be the same thing over again. The treatment of the two transepts, as they may be called, on each side of the central mass, with their cross vaults and lofty windows, will be one of the finest interior effects to be seen in any cathedral in England, and is impressive externally also. The two criticisms we may wish to offer for consideration, at this stage of the work, are these. (1) We should prefer to see a lofty spire over the centre, instead of the low pyramidal roof which is just seen above the balustrade of the tower; the composition affords plenty of base for such a spire, and it would relieve what seems at present the rather low line of the whole. (2) We rather question the significance of the large recessed arch in the lower part of the centre block; if there were a main entrance there it would have its meaning; as it is, it looks (in this sketch at least) rather like an arched opening only made to show an inner wall behind it, and one does not see very well why it was introduced. In the main, however, we can promise the people of Liverpool, whatever scribblers in the papers may say, that they are going to have a very fine cathedral—when it is finished.



PERSPECTIVE VIEW OF LIVERFOOL CATHEDRAL, FROM THE SOUTH.

THE ARCHITECT IN TRAINING.

BY GERALD C. HORSLEY, F.R.I.B.A.

In his presidential address at the annual general meeting of the Architectural Association on October 2nd, Mr. Gerald C. Horsley outlined some forward movements which are in contemplation for the higher education of the architect, and insisted on sincerity of devotion to the Mistress Art, and on the vital importance of "character."

FELLOW members of the Architectural Association,—Before I begin what I may call the more serious part of my address, I would like, first of all, as your President for this session, to have a word with you about our Association. The Architectural Association has already travelled far upon the road towards fulfilment of the ideal of its founders. I like to think that that ideal was to inspire in its members a true love of art, rather than a mere desire to be successful business men. This was the aim of a band of young architects, the founders of our Association, sixty-four years ago.

A First Principle.

As the first president of our Society, the late Professor Robert Kerr, said a few years ago, when speaking of its origin and the conditions of architectural training at that time, "the time had come for a stirring of dry bones. It was not the seniors, but the juniors themselves who made the demand—that there should be supplied to the inquisitiveness of youth something more up-to-date than all this" (referring to the architectural training of that time). "Why not take the matter in hand for themselves?" said young Charles Gray and others. "Why not indeed?" said Donaldson and Godwin. So they did it; and the upshot of it has been that, not in London alone, but in other centres of English energy, it has become a first principle in our professional training that the young men shall put their own shoulders to the wheel as an organised body. And well, thoroughly well, has it answered. So will it ever be. Enthusiasm is with the young.

The Growth of the Association.

There are a few figures in proof of the steady growth of the Association. The present number of members is 1,611. This time last year it was 1,589. Thirty-five years ago it was 668, showing a growth since that time of about 1,000. The number of students also in the classes from the foundation in 1847 up to some 10 years ago, when the schools were placed upon their present basis, was a varying number in proportion to the number of members at the time. Since 1901, when the present schools were formed, the number of students who have passed through them is about 1,500. These numbers surely speak well of the work done in furthering the aim and ideal of our society.

Before the School was Founded.

Having reviewed in some detail the various activities of the Association, with particular reference to the athletic side—"We all have to put in much intellectual work nowadays; and to keep fit intellectually we must keep fit bodily, and the athletic club will help us in a particularly delightful way"—Mr. Horsley addressed himself more directly to the subject of architectural training. The large subject of the School of Architecture, said Mr. Horsley, I deal with more fully presently; but this I will say—that after many years of voluntary and disinterested endeavour, the Association has a school which is second to none in this country. When I consider its well-thought-out scheme, and many advantages, I am forced to think of the more simple conditions which obtained when I and my contemporaries left school in order to study architecture, some thirty years ago. Perhaps you will not think me too prolix if I recall my own beginnings and compare them with your own. It was my good fortune in 1879 to be articled for three years to Mr. R. Norman Shaw. You can guess they were happy years. There was much to learn, much to inspire. But at that time there was no organised system of education beyond the term of pupilage, except the instruction given in the evening at the Royal Academy Schools, in some Art Schools, and the voluntary evening classes of this Association. We (I speak of myself and my contemporaries), or most of us, joined the Royal Academy Schools during the term of our pupilage on submitting drawings to prove our fitness for admittance, and worked there in the evenings. On looking back, I think the chief value of that school work was the competitive work for the prizes. It was a good exercise, and lasted some time, for the Academy studentship alone lasted some six years. Travel abroad, working as an assistant, and competing for the Royal Institute prizes, filled up our time till, some eight or nine years after the first days of pupilage, we began to practise.

Educational Means.

When I was thinking of my address to you to-night, it occurred to me that I could not do better than begin it by quoting the following words written by our great King Alfred more than a thousand years ago: "Thou knowest that no man may understand any craft, or wield any power, unless he have tools and materials. Every craft has its proper tools." It is true the King was writing about kingly power, and describing the tools and materials necessary to make that power of a fit and noble kind, still the quotation, so clear and to the point, as was the way of the great ruler and lawgiver, sufficiently describes the aim of this Association, which is to give its members power to do good work by the provision of a thorough system of education. The most important work of the Association is the School of Architecture, the successor of the old voluntary system of education for which the Association was primarily founded. Professor Beresford Pite, himself an old member, and past-president, well acquainted with the history and work of the Association, has joined the educational staff as Director of Education in the Schools. As a Master in the Evening School, and as Lecturer in both the Day and Evening Schools, he will instruct as well as direct This is an accession of strength to our system which Mr. Maule and the Assistant Masters have heartily welcomed, and I think we are entitled to congratulate ourselves upon it, and to hope for a continued healthy growth of our means of education.

Developments.

In addition to the four years' course it is intended to form at once an advanced class, or a fifth year's course for those who are desirous of pushing their studies further. Hitherto the four years' course has been founded upon the syllabus put forth by the Board of Architectural Education, and a tradition of sound and carefu work has been established in the Schools, which is constantly growing, and expanding to meet the needs of the day. There are those who hold that a four years course is sufficient for an architectura student before beginning to practise, and particularly for the man who has been to a university. Though I am strongly of opinion that four years is not enough for the greater number of students, I admit there is a good deal to be said for this period of study in the case of those who have spent three or four years at the University, and who have done well there Time is of consequence in their case and the trained minds of students who have been through the university course will learn and absorb more quickly than the minds of those who enter the schools here direct from the public schools. For these last I assume, and I believe rightly that the four years' course is too short a term of instruction, and I believe that the student who makes up his mind to spend the years between 18 and 28 in the close study of his art, earning his living, if necessary, meanwhile, as others have done before him, as an assistant to architects in practice, before practising as an independent architect, is more likely to become an accomplished artist than he who begins to practise immediately on the conclusion of his articles. It seems to me that if it were possible to combine the general education of a university with the acquirements of the preliminaries of architectural knowledge for perhaps two year after the student has left his public school it might be very valuable. These are matters which I hope may come before the Board of Architectural Education fo consideration; for I believe it will become necessary for the advantage of ou students generally, to bring about a co-ordination of the present opportunitie for the advanced student who has completed the four years' course.

The Royal Academy Schools.

There exists, however, the difficulty that, while the competition for the prize of the Royal Institute of British Architects is open to all bona fide architectura students, in the case of the Royal Academ the competitor must have passed throug the full terms of studentship. As an old student of the Royal Academy, and one who has a great respect for its system of training, I can understand that its prize are intended for its own students; but a one anxious to see a higher development of our general educational system, I feel i would greatly assist the student of to-da if he might enter the advanced classes o the Royal Academy upon satisfying examiners as to his ability, without bein obliged to go through the whole course For instance, it would be an advantag for our students who have obtained thei certificates here after several years' study to enter the Royal Academy Schools t compete for the gold medal and travellin studentship, and to reap the advantage of meeting with students who are studying the sister arts of painting and sculpture. A goodly number of our students are debarred at the present time from doing this, through having to go through probationary period on entrance, equivalent to the earlier years of the course completed by them here.

The Value of Travel.

The training which a student must undergo who intends to compete for one of these prizes is of great importance to him, while the fact that nearly all of hem, such as the Royal Academy gold medal and travelling studentship, the Soane medallion, the Tite prize, the Pugin, the Owen Jones, and others of the Royal Institute of British Architects, carry with them an obligation upon the successful competitor to travel either in England or abroad, for purposes of study, constitutes their great educational value. In my opinion the education of the advanced student is not complete until he has studied abroad. He may do this by ndependent travel, or he may join for a ime the British School at Athens, or the Great French School. All admirable courses to pursue, and well worthy of your attention and consideration.

A British School in Rome.

Further, in connection with this important part of a student's career, I would like to mention the probable foundation of a large British School for advanced students in Rome. This possibility inspires the hope of an extension of the opportunities for advanced study of a particularly interesting kind. The development of this scheme may necessitate at some future time, such a co-ordination of the means of study to which I have alluded, as might lead to the formation of a great National School of Fine Art and the crafts of building, in this country, of which our schools would form a recognised part.

The Example of the French.

The formation of such an advanced school does not presuppose any slavish imitation of the French school, though I believe we may learn much from that school. For instance, we must not forget that the well-organised years of study of the best French students—those, for example, who have won the Prix de Rome, and have spent the four years (which is the condition on winning that prize) in the study of old work in Italy and Greece —have contributed to the great achievements of French architects during the last two hundred years. It was at any rate this very thorough system of training which helped Labrouste to build his library of Ste. Geneviève in Paris, and his notable additions to the Bibliothêque National; which helped Duban in his building of the Beaux Arts, and Duc at the Palais de Justice.

As the Man, So the Work.

We must recollect that the foremost students "set the pace" all the world over, and inspire their fellows to put forth their best powers. We have here in England artistic forces which, if combined, would I believe prevent much waste of energy and power, and would tend to the production of finer work of a more national character. The chief principle which in my view leads to success is, that if you are going to be a distinguished artist, you must first of all be a distinguished student. No system of education is of use which does not bring out and form those qualities which make up what we know as "character." As the man is, so will his work be; it is essential therefore for a student to have access to the best models, and to be brought into contact with the best and highest thought, both ancient and modern. In this way will his own character be formed by the true artistic influence which flows from great men and great work. Carlyle says in all true works of art the godlike is rendered visible. If so, the artist must be creative, and our aim should be to make our students receptive, imaginative, and fruitful in ideas and design, so that they may become creators of beauty. Our motto is "Design with beauty, build in truth." We might well add Shakespeare's words, "By knowledge are we lifted up to the gates of heaven."

Beauty in Architecture.

To our students I would say let the motto of your Association become your own motto, and with it in your hearts take full advantage of the education offered to you here in both schools, remembering that the evening school is the complement of the day school. Make it an aim to keep yourselves ever open to the artistic influence by sincere and truthful study. Robert Louis Stevenson, in one of his delightful essays, says that the best artist is not the man who keeps his eye fixed on posterity, but the one who loves the practice of his art. And no art can give its author more intense pleasure than the mistress one to which you are devoted. Beauty in architecture has many manifestations; you may have it in the exquisitely delicate and refined detail, or in that which is splendidly bold; in the stately and dignified plan and elevation; in the fine lines of the column; or in the sense of superb scale. We have in England to struggle against the small and petty detail which disfigures building after building to-day. We need to absorb into our minds the principles of broad and fine work. Look, for instance, at a fine capital of a pilaster of Francis the First's time; the sweep of the line of the horns or volutes, as vigorous as the clean line of a rapier, the flat relief of the intermediate carving as delicate as the damascene pattern on its blade.

The Spirit of the Great Masters.

I have lately been reading some of Sir Joshua Reynolds's "Discourses"—a work I would commend to your notice—and I was struck with the earnestness with which he impressed upon the students of the day the necessity of possessing themselves with the spirit of the great masters; and also with the manner in which he cheered them with encouragement to be determined to succeed when he roundly states "he should have felt the same determination to become the most eminent physician as he then felt to be the first painter of his age and country." Such a statement, in its simplicity, reminds one of the remark attributed, I believe, to Mr. Edison, "that success in life is due to one per cent. of inspiration, and 99 per cent. of perspiration."

Reynolds and Wren.

It was Sir Joshua Reynolds, who, as I dare say some of you will remember, went, as a distinguished young painter of 30 years of age, to Italy to see for the first time the work of the great masters of the Renaissance. So impressed was he that he has written he felt he must become again as a little child, he had so much to learn. In this wonderful humbleness of heart Sir Joshua reminds me of Sir Christopher Wren, who showed the same willingness to learn, as is illustrated in that most interesting letter, which you probably know, which he sent from Paris, where he had gone for the purpose of study. Surely these two men were much alike in character, with the same wide and sane way of looking at things, and the same thirst for knowledge. That "spirit of the old masters" which they possessed made him strive for a right kind of perfection in their work. It made them reject what was small and petty, and adopt the manly and virile. It made them discern and eliminate their defects, for, as Sir Joshua said to his students, "it was not by their defects that considerable artists acquired their reputation; they have a right to our pardon, but not to our admiration." He also taught that a student must not by mistaken industry lose his time in that which is merely ornamental. And in speaking of copying the old masters he says, "Instead of copying the touches of those great masters, copy only their conceptions. Instead of treading in their footsteps, endeavour only to keep the same road. Labour to invent on their general principles and way of thinking. Possess yourself with their spirit. Consider with yourself how a Michelangelo or a Raphael would have treated this subject, and work yourself into the belief that your picture is to be seen and criticised by them when completed. Even an attempt of this kind will rouse your powers." He knew of his art, as we know of ours, that it is a progressive art; it is ever growing; and to-day, when science advances with strides, when space is being conquered, and distant lands may soon be easy of access, who among us can prophesy the future of the young architects? It shines in the distance as something mysteriously and gloriously interesting. And that future is not for these men only who carry off the most prizes. We cannot all be Prix de Rome men. It is for all who do good work—and again I quote from Robert Louis Stevenson—"All who have meant good work with their whole hearts have done good work." No man, even the greatest, ever arrives at the ultimate goal; he does his part, and passes on his experience to the next in the race, and very soon that responsibility will be yours. The future is for you, as again it will be for the young men who come after you.

To Educate the Public.

In the meantime you have to prepare for that future, remembering that according to the truth and sincerity, the high ideal, that you put into your work so will your influence upon the public be, and with you rests the education of the public. In order to emphasise this I am again going to quote to you from Sir Joshua Reynolds's "Discourses," and I do not apologise for this, because, as I have told you, great men are our best teachers. In speaking to his audience on the subject of raising the public ideal he reminds them of a remark of Euripides, who said to the Athenians "I do not compose my words in order to be corrected by you, but to instruct you." And he adds, "It is true to have a right to speak thus, a man must be an Euripides. However, this much may be allowed, that when an artist is sure that he is upon firm ground, supported by the authority and practice of his predecessors of the greatest reputation, he may then assume the boldness and intrepidity of genius; at any rate he must not be tempted out of the right path by any allurement of popularity which always accompanies the lower styles of painting."

The Note of Character.

I think we may say that this is equally true of architecture. Great men, who are the truly thoughtful men, always sound again and again the note of character. They know that a nation's place depends upon its national character, and the men and women of the day are the nation. In a sense we are all artists; but to you young men, who are not only artists in this general sense, but belong to one of the noblest—perhaps the noblest—of the artistic professions, I would quote as a motto, and in conclusion of my address, King Alfred's words, "This will I say—that I have sought to live worthily the while I lived, and after my life to leave to the men that come after me a remembering of me in good works."

DISCUSSION.

Mr. Arthur Keen said it was the particular privilege of the retiring President to propose a vote of thanks to the new President at the opening meeting of a new session. He had known Mr. Horsley from the day he first entered upon his architectural career, and it was to him (Mr. Keen) a very great pleasure to find him so worthily occupying the presidential chair of the Association; and he congratulated him upon having reached that position. Mr. Horsley's quotations from King Alfred seemed singularly appropriate to architecture, in particular that which referred to the tools of one's trade. The tools placed at the disposal of A.A. students were of the best—better did not exist. At the Association they believed in proceeding from building to architecture. In the teaching of architecture in the school, however, he saw this danger. too much pencil and paper without the necessary instruction in materials. It was, therefore, always their endeavour to preserve an even balance. The Gothic Revival, still a potent force, was the true expression of materials; and its influence would act as a powerful corrective of what was known as the "Academic" method of teaching and training. He had no doubt that we had arrived at a second shaking-up of the dry bones, and it remained to be seen what sort of body would be made of it. He hoped that the Royal Academy would come into the matter in some active way.

Mr. W. Curtis Green seconded the vote of thanks, and referred to an essay on the "Unity of Art" written by Mr. Horsley nineteen years ago. Since then Mr. Horsley to him had stood as a name that counted. Ten years ago they became neighbours. Mr. Horsley dined him and golfed him, and influenced him in a somewhat painful architectural development. He believed that their President would make his year of office worthy of himself, and of the best traditions of the Association.

Mr. Paul Waterhouse said that no man who was an architect could abandon himself to the feeling that he was becoming aged or even middle-aged. The architect should work in the spirit of eternal youth. Sometimes they came across the combination of a fine draughtsman and a fine architect; and such, indeed, was Mr. Horsley. He was also a public speaker, and thus filled all the requirements of a modern architect.

Mr. Horsley made a brief reply, in the course of which he referred to the difficulty of following so good a speaker and so hard a worker as Mr. Keen. It was, however, his firm intention to further the best interests of the Association during his year of office.

A A. List of Awards, Session 1910-1911.

G. W. Home, A.A. Silver Medal. C. F. Butt, Architectural Union Co.'s Prize. W. J. Durnford, Banister Fletcher Bursar, 1909. T. F. H. White, Banister Fletcher Bursary, Drainage and Water Supply. A. G. Shoosmith, Class of Design Prize. H. J. H. Dicksee, History, Construction, Geometry, Physics, Studio Prize. (All of the first year.) E. C. Davies, Freehand Drawing (First Year). D. J. Gordon, Travelling Studentship, Second Year; End of Session Test, 2nd Year; prize offered by H. P. G. Maule. E. Kennedy Smith, Scholarship, Preparatory Courses. J. B. M. Walch, Preparatory Course, Geometry, European Mediæval Architecture. J. A. Hale, Master's Prize, Preparatory Course. A. B. L. Roberts, Scholarship, Third Year. G. W. Stuart, Book prize, Third Year. T. F. Ford, Master's Prize, Third Year. H. V. C. Curtis, Travelling Studentship, Fourth Year. F. A. Crouch, Master's Prize, Fourth Year; Fourth Year Book Prize. C. W. Marles, Preparatory Physics. C. J. McCausland, Preparatory Physics. A. B. Peermahomed, Intermediate Physics. G. Fildes, Renaissance Architecture, Greek and Roman. P. H. Bagenal, English Architecture. C. M. Cooper, Advanced Physics. G. A. Fortescue, Ventilation, Lighting and Heating, Professional Practice. H. Gresswell, Materials.

The following students have been recommended by the External Examiner, Mr. Paul Waterhouse, for the Board of Architectural Education Certificate, which entitles them to exemption from the R.I.B.A. Intermediate Examination:—A. S. G. Butler, F. A. Crouch, G. A. Fortescue, B. P. Gaymer, J. O. B. Hitch, L. D. Martyn, C. W. Rogers.

The following students have been awarded the Association Two Years' Course Certificate: H. D. Archer, S. A. Bennett, D. E. Cruickshank, F. G. Detmold, T. W. Dowsett, G. Fildes, D. J. Gordan, W. Harkess, E. J. T. Lutyens, A. B. Peermahomed.

At last week's meeting of the Association, the President gave notice of a vacancy on the Council caused by the resignation of Mr. P. W. Lovell. The Council will at the next meeting suggest a candidate, and under by-law 37 any member may nominate any other candidate.

LEGAL.

Contractor and L.C.C. Official.

On Thursday last at the South-West London Police Court, James Proctor, of the firm of Messrs. Proctor and Sons, contractors, High Road, Plumstead, answered to an adjourned summons charging him with having offered a bribe of £100 to George James Symmonds, a district superintendent in the service of the London County Council. The defendant's firm tendered for the painting of Vauxhall Bridge. On the day prior to the time fixed for depositing tenders Mr. Proctor called at the private residence of Mr. Symmonds, at Clapham, and, it was alleged, offered a bribe of £100 for the return of some assistance. Mr. W. C. Copperthwaite, bridges engineer to the Council, said that a visit to the superintendent's house on the part of a prospective contractor was most irregular. Contractors, he understood, sometimes incurred a loss when doing work for the Council. He did not understand Mr. Proctor to say that when speaking of the £100 he meant to explain that that was the amount of his profit in connection with a previous contract. The defendant, who reserved his defence, was committed for trial, and he was released without being required to find bail.

CORRESPONDENCE.

The Architecture of Stamford.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—The "unbeautiful Stamford Hotel" by "Bond of London," is a building designed by John Linnell Bond, the architect of Waterloo Bridge. It is certainly caviare to the multitude; I am sorry if architects do not value it. In Stamford there are excellent examples of the mistake of extremes. Most of the pretty little houses are sentimentally charming and architecturally worthless, while this poor maligned hotel is of scholarly design and fine proportion, but has no recommendations either of texture, colour, or picturesqueness.

I have always suspected that the "Portico" is Bond's work, too; he was employed in the neighbourhood from about 1812-30.

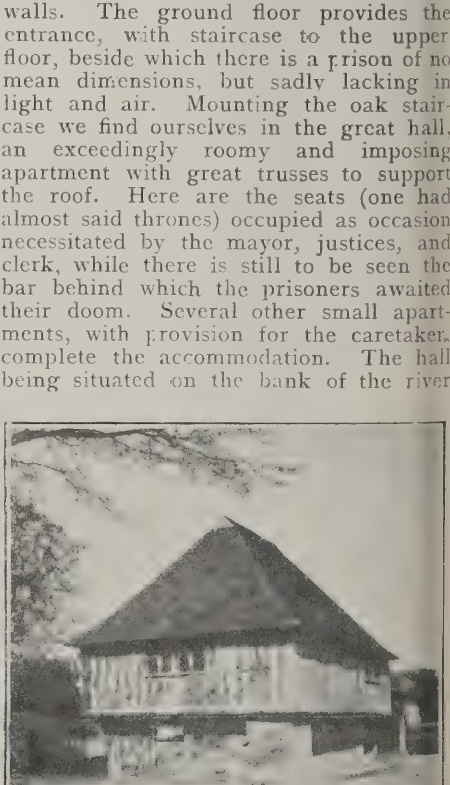
H. S. GOODHART-RENDEL.

London, W.C.

Old English Town Halls.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—In the admirable article on "Some Old English Town Halls" in your issue for September 27th you refer to the half-timber hall at Shrewsbury, rightly, as unsatisfactory in expressing at once its purpose. May I be allowed to suggest that even with the "homely" materials employed this need not have been the case? I send a view of the Town Hall at Fordwich, which town, it will be remembered, was once an important port, being, in fact, the port for Canterbury. This little hall, with its brick base and half-timber upper floor and simple hipped roof, possesses quite an air of municipal importance in its own quaint way. A glance inside and we are bound to admire, if being at once amused with the manner in which the desirable accommodation is secured within four small walls. The ground floor provides the entrance, with staircase to the upper floor, beside which there is a prison of no mean dimensions, but sadly lacking in light and air. Mounting the oak staircase we find ourselves in the great hall, an exceedingly roomy and imposing apartment with great trusses to support the roof. Here are the seats (one had almost said thrones) occupied as occasion necessitated by the mayor, justices, and clerk, while there is still to be seen the bar behind which the prisoners awaited their doom. Several other small apartments, with provision for the caretaker, complete the accommodation. The hall being situated on the bank of the river



FORDWICH TOWN HALL.

ur, a heavy ducking stool was pro- ed for scolds, hung by a great chain n an oak crane hinged to the wall rlooking the river.

lmost dead now, Fordwich is rich in rest, with its town hall, inn, and rch, standing side by side on the river k.

W. J. PRICE.

ondon, E.C.

the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

IR,—Referring to your interesting strated article on town halls, I send hotograph of the Moot Hall at Alde- gh, which may be of interest to your ders. The date of the building is ed to be "about the 14th century." en built it was in the centre of the n, the market cross being situated at northern end: the stocks and pillory pleting the group. Now, owing to encroachment of the sea, the beach es almost up to the hall, and the ket cross has long disappeared.

he accompanying view shows the land- of the hall, with the external stair- leading to the council room, which till used as such. The roof is heavily oered and well worth inspection. The er storey was of course originally used a market, but later became the town l; sundry "irons" and other instru- its of correction being still extant and ibited, together with the then stan- d weights and measures. An ancient remarkable map is also preserved ch shows the extent of old Aldeburgh, its ten churches, nine of which are beneath the sea. I believe part of lower storey is used as a museum for custody of various relics, archæo- cal, geological, etc.

MOOT HALL, ALDEBURGH, SUFFOLK.

he architectural features of the build- speak for themselves. There is a dial on the south gable (not visible he view) and a seat on the seaward under the overhang of upper storey. h more might be said of this beauti- link with the past glories of an ent town once of considerable import- e, and it is to be hoped that it may be preserved.

B. M.

The Treatment of Hospital Walls.

the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

IR,—In your issue for October 4th, I that you quote largely from an article he above in "The Hospital," which is of a series upon hospital construc- . It would be somewhat rash for a e architect to point out errors in a ical paper, but when you hand them for the consumption of architects I k I may venture to warn your readers even "a good quality varnish paper" is not generally considered a suitable treatment for hospital walls. I might add also that the "conclusion arrived at" that composition floors are the best for hospital floors must be taken with caution. Quite apart from the appearance of this material and its lack of resiliency, there are some features connected with its use (I believe hitherto unsuspected) upon which I may have something to say later.

And, speaking of hospital floors, it is of interest to note in illustration of the adage as to there being "nothing new under the sun," that Mr. Heaton shows that terrazzo floors with cavetto skirtings were used in the Palace of Knossos (see R.I.B.A. Journal, September 30th, 1911).

A. SAXON SNELL, F.R.I.B.A.

London, W.C.

BUILDING ACCIDENTS.

Brick Slip Fatality.

At the London City Coroner's Court on Wednesday last, Dr. F. J. Waldo held an inquest concerning the death of George Overall, aged 37, a labourer, who died as the result of injuries received owing to a fall of bricks during some building operations at Moorgate Street, on the preceding Monday. Two other men who were injured at the same time were stated not to have recovered sufficiently to attend.

Thomas Hutchinson, foreman in the employment of Messrs. Trollope and Colls, said that the firm was erecting a building in Moorgate Street, and the deceased was engaged in levelling the concrete in a trench. Bricks were being unloaded from a cart by means of a skip; 592 bricks were placed on a skip, which was then lifted on a hook and chain by an electric derrick. When they were being lowered into the basement, where they were to be used, about 20 or 30 of the bricks slipped out. There were 20 men at work below, but only three of them were struck. The witness had never heard it suggested that such skips were dangerous. The only explanation he could suggest for the accident was that there might have been one or two small bricks on the outside, and that they worked loose.—Richard Williams, a labourer, said that he loaded the skip with the utmost care. He thought that a small piece of one of the bricks must have been broken, thus causing one brick to shoot out and loosen the rest.—A crane-man, named Singer, said that when he saw the bricks falling he shouted to the men working below to run. All managed to get out of the way save the two injured men, who were struck as they commenced to run, and the deceased, who was in a trench at work, and could not get away.—Mr. C. C. Plumbe (Home Office inspector) expressed the opinion that some safer form of skip might be devised than that which was at present in general use.—Mr. Roberts (for Messrs. Trollope and Colls) said that the building trade would welcome any improvement, provided it was devised in a practicable form.—The jury returned a verdict of "Accidental death," and suggested that the Home Office should consider the possibility of devising a safer skip.

Fall of a Gantry Crane.

On October 3rd a crane accident occurred in New Kent Road, London, resulting in the death of one man and injury to several others. The crane was mounted on a three-legged gantry about 100 ft. high, and it is thought that the collapse was caused by the sudden fracture of a "gland iron."

OBITUARY.

Mr. James Aumonier.

We much regret to have to record the death of Mr. James Aumonier, the eminent landscape-painter, at the age of 80; we are surprised to learn that he was so old a man, for he was exhibiting new works quite recently. Mr. Aumonier was a much finer landscape-painter than was popularly recognised; indeed, he came very near to being a great painter, and his failure to get at any time sufficient votes to secure his election to the Royal Academy is a satire on the judgment of the Academy, when we consider what far inferior landscapes are hung on the line every year with the letters "R.A." appended to them. Mr. Aumonier was of French descent, and it may very well be that this fact traditionally influenced his style in landscape-painting, which was essentially French, dealing in broad effects and the expression of the sentiment rather the mere detail of a landscape.

M. Rochet.

The death is announced of M. Justin Rochet, the architect of the Academy of Medicine and of the Nouvelle Pitié. Although the latter building has been occupied since July, the architect did not live to witness the official opening ceremony. As Architecte de l'Assistance Publique, he had acquired a special reputation for hospital construction and equipment, and he designed the Cap-Breton hospital in the Landes, and the Auban-Moët hospital at Epernay. He also won much commendation for his "discreet and pious" restorations at the cathedral of Saint-Dié.

Mr. David Jardine.

The death occurred last Saturday of Mr. David Jardine, head of the Liverpool firm of timber brokers, Messrs. Farnworth and Jardine.

British Museum Extension.

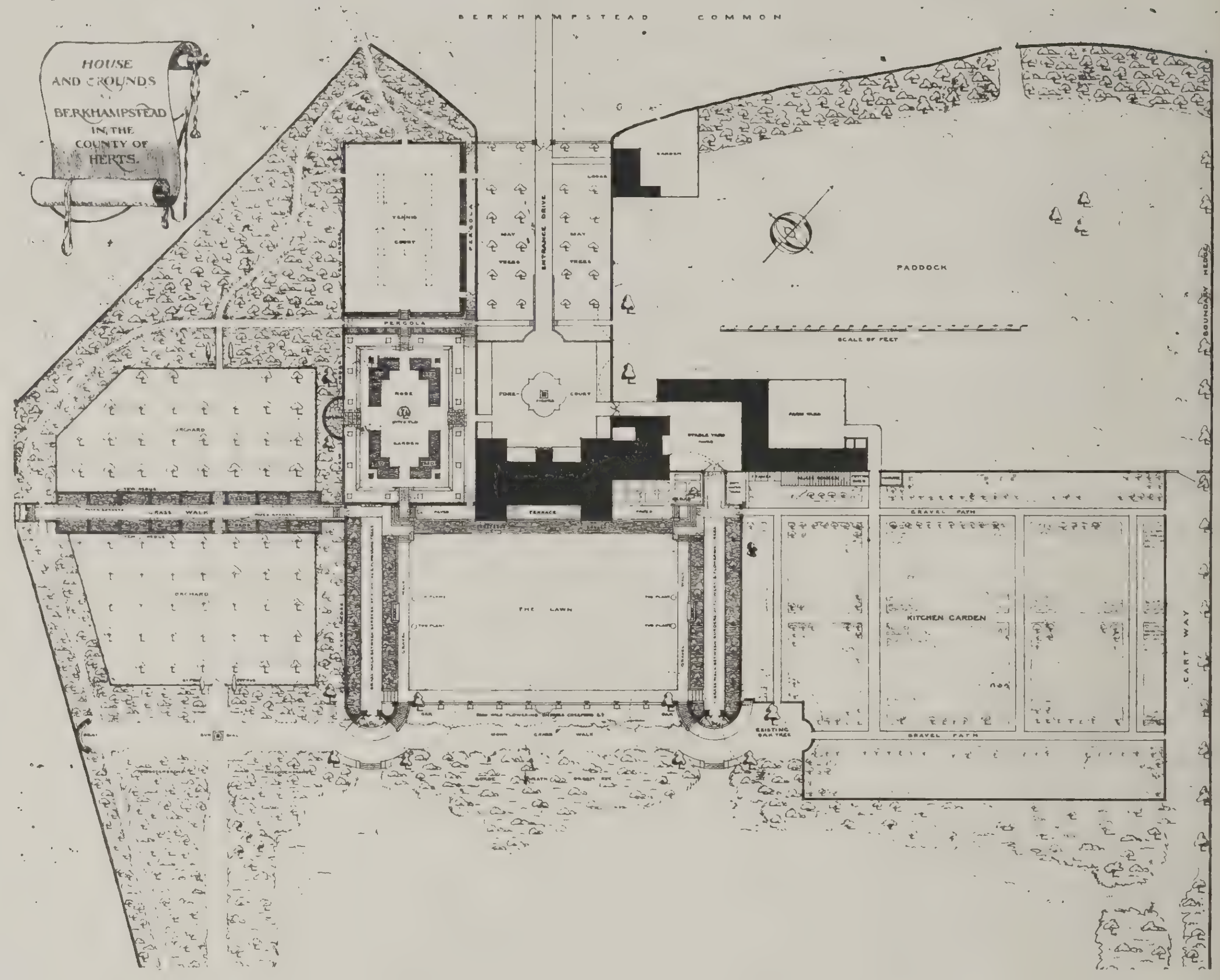
The contractors for this work, of which a brief description was given in our last issue, are Messrs. W. E. Blake, Ltd., of London and Plymouth. The architect is Mr. J. J. Burnet, A.R.S.A.

Lectures on English Mediæval Architecture

A course of eight public lectures on "English Mediæval Architecture" will be delivered at University College, on Thursdays, by Mr. E. S. Prior, F.R.I.B.A., these being the Carpenters' Company University Lectures on Architecture. Cards of admission may be obtained from Mr. Walter W. Seton, secretary, University College, Gower Street, W.C. The first lecture will be given to-morrow, Thursday, October 12th, at 6 p.m.

The Moving Stairway.

The moving stairway connecting the "Piccadilly" and District Railways at Earl's Court Station was opened for traffic on Thursday last. It begins as a platform and goes onward until it forms into steps, rising slowly until it makes a complete staircase. The progress is steady and noiseless, and a little faster than one would ordinarily walk. A hand rail of flexible material moves upwards at the same speed as the stairs. At the top and bottom the stairs flatten out into a moving plane, and the passenger then steps on to a stationary landing at the same level. The stairway is capable of carrying 10,800 people per hour from the "Piccadilly" to the District, and a similar number in the opposite direction.



PLAN OF HOUSE AND GROUNDS AT BERKHAMSTED. ERNEST WILLMOTT, F.R.I.B.A., ARCHITECT.

SOCIETIES AND INSTITUTIONS.

The Surveyors' Institution.

The Hon. John Collier has painted a portrait of the Lord Chief Justice, in his judicial robes, for the Council of the Surveyors' Institution, of which Lord Alverstone has been an Associate member for a quarter of a century. It will probably be unveiled at the first meeting of the winter session next month. Portraits of two of the past-presidents, Sir Alexander Stenning, by Mr. Tennyson Cole, and Mr Daniel Watney, by the Hon. John Collier, have been privately subscribed for by members of the Institution. Mr. Daniel Watney is the senior past-president of the Institution, and has been a member of the Council for 37 years.

Rapid progress has been made with the erection of the addition to the Institution's building in Great George Street, Westminster, and it is expected that the enlarged lecture hall will be ready when Mr. W. Edgar Horne, M.P., delivers his presidential address in November. The architect of the new buildings is Mr. Paul Waterhouse, F.R.I.B.A., and the builder Mr. J Carmichael. The extra accommodation will enable the offices of the secretary and staff to be concentrated at the rear of the building, giving additional room for members in the front portion of the Institution for reading, writing, and arbitrations.

Glasgow Technical College Architectural Craftsmen's Society.

In the course of his recent presidential address to the Glasgow Technical College Architectural Craftsmen's Society, Mr. James S. Boyd, Licentiate, R.I.B.A., dealt with the application of practical geometry to (a) the solution of problems in stone cutting, and (b) to the full-size drawing down and mould-cutting in masonry work. Referring to the training of young masons who desire to become qualified foremen, Mr. Boyd said that such should possess considerable skill in the application of practical geometry to the varied and complicated masonry problems which at times occurred, otherwise they would experience difficulty in making the necessary scale drawings from which to obtain the shapes and dimensions of the blocks for ordering, and would experience even greater difficulty in drawing down the work full size on the drawing floor. Mr. Boyd described by demonstrations how to set out arches of various forms on the latter, and how the moulds and bevels are developed in work of double curvature—skew bridges, interpenetrations of vaults, domes, and other more or less complex masonry constructions. Referring to the cutting of zinc moulds, he condemned the general custom of giving that work to the joiner instead of to the mason, who was responsible for producing correct work.

OUR PLATE.

A House and Garden at Berkhamsted

In the house and grounds at Berkha
sted both the site and the accommoc
tion required have lent themselves to sy
metrical treatment. The house is si
ated on ground which falls towards t
south-east, sharply increasing its desce
as it nears the boundary. The long a
of the house is practically parallel wi
the contour of the hill face, and the asp
for the principal rooms is thus the m
desirable to be had. The south-east fro
is raised upon a terrace wall some 8
above the herbaceous border which for
the boundary to the lawn on the up
side. The two wings of the house proj
over the flagged terrace, which is e
tended in flower-bordered walks to rig
and left, varied in level to accommoda
themselves to the ground, but set o
upon a single axis, and thus providing i
teresting vistas from either loggia of t
house. The lawn is flanked at each e
by terraces slightly raised above its lev
The centre of each terrace is occupi
by a grass walk 12 to 15 ft. in widt
which is itself bounded by wide he
baceous borders, in which, at interva
are planted small flowering trees.

Mr. Ernest Willmott, F.R.I.B.A.,
London, is the architect. The drawi
reproduced as the centre plate in this iss
was exhibited at the Royal Academy th
year.

ENQUIRIES ANSWERED.

Church Roof Truss.

Alpha (Pontypridd) writes: "The trusses of a church roof are 29 ft. span, and are fixed at 15 ft. centres. They are carried off 18 in. square common brick piers, the thrust being carried down to the outside buttress. It is proposed to use laminated ribs to form the arch supporting principals and king post at top. Please give me the following information: (1) Size of timbers necessary; (2) approximate amount of 'kick' at the joint with the piers, (3) best method of constructing this joint, (4) comparative cost of this truss compared with a solid truss."

—The elevation of truss submitted by querist is shown in Fig. 1, and it must be divided into three parts to enable a stress diagram to be drawn. First take the top part as shown in the frame diagram, Fig. 2, and work out the stress diagram, Fig. 3, from which the stresses may be scaled off and marked on Fig. 2. The reactions from this part of roof are then taken as loads on the two sides, as shown in the frame diagrams, Figs. 4 and 6, for which the corresponding stress diagrams are shown in Figs. 5 and 7. The calculations of sizes will be as follows: For the principal rafter 5 ft. 6 in. unsupported length, with a maximum compression of 185 cwt. and tension of 238 cwt. try a 12 in. by 6 in section. Then

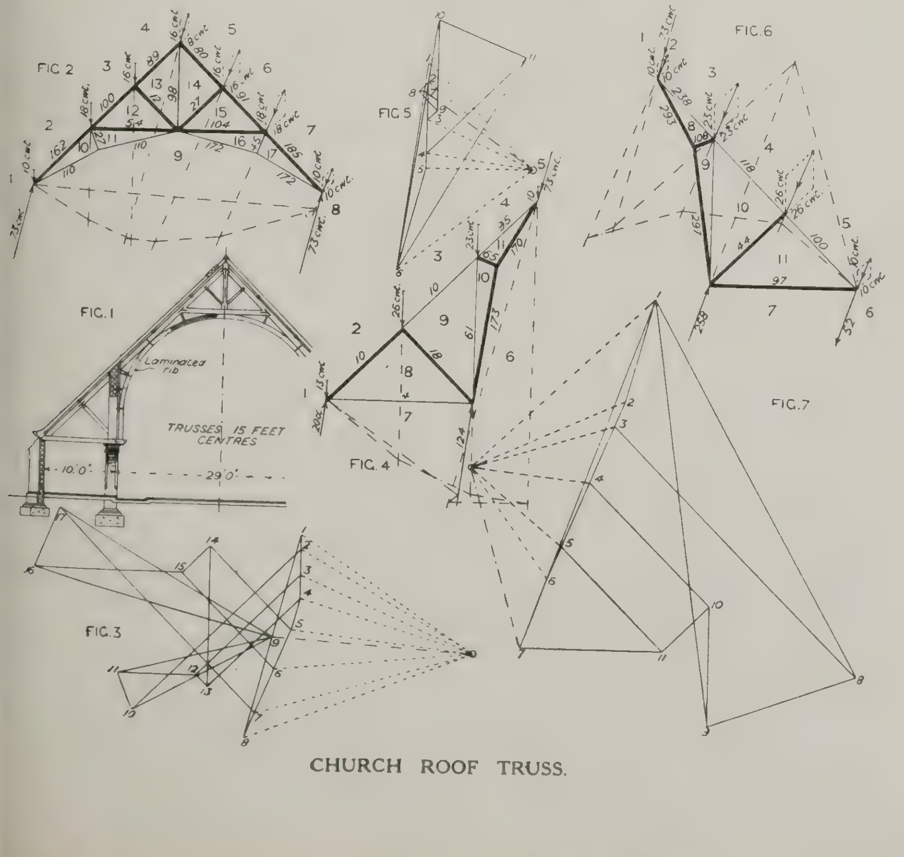
$$W=\frac{FS}{1+\frac{m}{nq}\left(\frac{l}{d}\right)^2}=\frac{6\times 78}{1+\frac{2.5}{1\times 250}\left(\frac{66}{6}\right)^2}$$

196 cwt. compression, and the same section at 3 cwt. per sq. in. will take 72 by 3=216 cwt. tension, so that this section will be practically sufficient. The laminated curved rib has a maximum compression of 297 cwt., and bending moment of 297×3=891 cwt.-inches. Try a 12 in. by 6 in. section, then

$$\frac{W}{A}\pm\frac{M}{Z}=\frac{297}{72}\pm\frac{891}{\frac{1}{6}(6\times 12^2)}=4.1\pm6.2=10.3$$

cwts. per sq. in. compression and 2.1 cwts. per sq. in. tension, and this section may be adopted although the compression is rather high. The other members may be worked out in a similar manner, using Gordon's formula for compression members, and allowing 3 cwt. per sq. in. on the net section for tension members. Members which may be subjected to either tension or compression must be calculated for both stresses. If the laminated rib be made out of ten 7 in. by 1¼ in. battens the planing up will reduce the width to, say, 6½ in., which will give the additional strength required.

HENRY ADAMS.



CHURCH ROOF TRUSS.

Steel and Concrete Floors.

A. C. (Southsea) writes: "(1) Would the steel and concrete floor shown in sketch [not reproduced] be suitable for a distributed load of 1½ cwts. per ft. super., including the weight of the floor itself? The concrete to be Portland cement concrete mixed 6 to 1. As the concrete is 50 per cent. deeper than the joists, I have assumed they need not be deeper than 1-30th the span. (2) How does the strength of a steel joist vary with the thickness of concrete around it? In the above case I have assumed the strength to be doubled, by being embedded in concrete 50 per cent. deeper than the joists themselves. (3) What is the greatest span concrete will carry over unsupported, say 6 in. thick, or any thickness (concrete mixed 6 to 1)? What is the best formula to use to find span and necessary thickness?"

—(1) The assumptions made by you are not rational, and the calculation of such a floor can be performed in no such way. Owing to the deficient adhesion of concrete to such a large section as a rolled joist it would not be wise to consider such a floor as a reinforced concrete one, but if rods were employed in the usual maner, about half the weight of steel would be saved and the concrete would be stressed to about 500 lbs. per sq. in. (2) The strength is undoubtedly increased, but it is a variable factor, and joists are usually designed to take all the load, though a high stress is often employed, and the deflection is known to be much less; so that joists down to 1-30th the span may be used. (3) The safe span of plain concrete flat floors will depend on the load and the thickness. I suggest that one might employ the following formula for ordinary quality concrete: $M=5bd^2$, where M=bending moment, b=width considered (usually 1 ft.), and d=depth of concrete.

D.

Books on Geometry.

W.F.P. (Kendal) writes: "Please recommend a good book dealing with geometry, as required for the Intermediate examination."

—The following books either fully or partly cover the subject of descriptive geometry in the R.I.B.A. Intermediate Examination, the first two mentioned being in the list of books recommended in the Kalendar:—J. H. Spanton's "Science and Art Drawing and complete Geometrical Course" (1895, Macmillan, 10s. nett). This includes a chapter on sciography and covers the whole ground. McGoodwin's "Architectural Shades and Shadows" (1904, 15s.), confined to the part of the subject suggested by the title. Pratt's "Sciography" (5s. 8d. nett, Chapman and Hall), a less expensive but thoroughly practical book on shadow projection. A companion volume to the text-books on practical mathematics, by Bates and Charlesworth, will shortly be published (price 3s.), by Mr. B. T. Batsford, covering the ground, with the exception of the projection of shadows.

B.

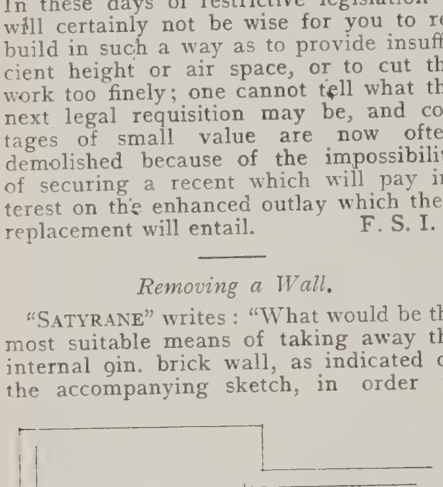
Rebuilding After a Fire.

J. K. P. (Essex) writes: "How should a building fully covered by fire insurance be valued against same, when burnt to the ground, with perhaps a flank wall and a chimney only remaining? The rooms were 7 ft. high, and there was no concrete over the site under the ground floor. The by-laws of the district stipulate in all new buildings that rooms should be 8 ft. high, and there shall be 6 in. of concrete all over the site. Can the additional height and concrete be claimed from the insurance company? In cases where an agreement is not arrived at by valuation, I believe the insurance company can be compelled to rebuild themselves. Would they not have to put the extra height and concrete? It is sometimes argued that if there is a wall left to build to, the work is a repair and not a new building, and does not come under the by-laws at all. Is this correct? And if so, how would the above points stand, supposing the building were totally demolished?"

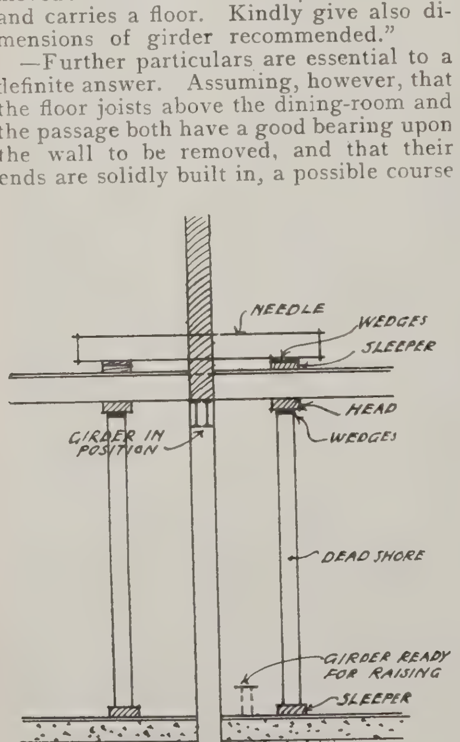
—A fire insurance policy is one of indemnity only, and is not a contract to pay a certain sum of money upon the happening of a certain event. Upon the occasion of a fire loss the insurance company are liable to repay the policy holder for the actual loss that he has suffered up to the amount specified in the insurance policy. In reply to your special enquiries, (1) the fact that the erection of similar buildings is forbidden by the by-laws of the local sanitary authority does not affect the liability of the insurance company; they only pay for what was burned, and the additional height and concrete now required are nothing to them. (2) The insurance company usually reserves the right, by the conditions of the policy, to reinstate a building or replace goods, if they think well, and, as a rule, there is no similar power vested in the assured. Is not this clearly stated in the present case? (3) If a building has to be completely pulled down and rebuilt, the reinstatement becomes a new building, but it is often a debatable point as to how much or little of the old building constitutes the work as a mere "alteration" within the meaning of the by-laws. In these days of restrictive legislation it will certainly not be wise for you to rebuild in such a way as to provide insufficient height or air space, or to cut the work too finely; one cannot tell what the next legal requisition may be, and cottages of small value are now often demolished because of the impossibility of securing a recent which will pay interest on the enhanced outlay which their replacement will entail. F. S. I.

Removing a Wall.

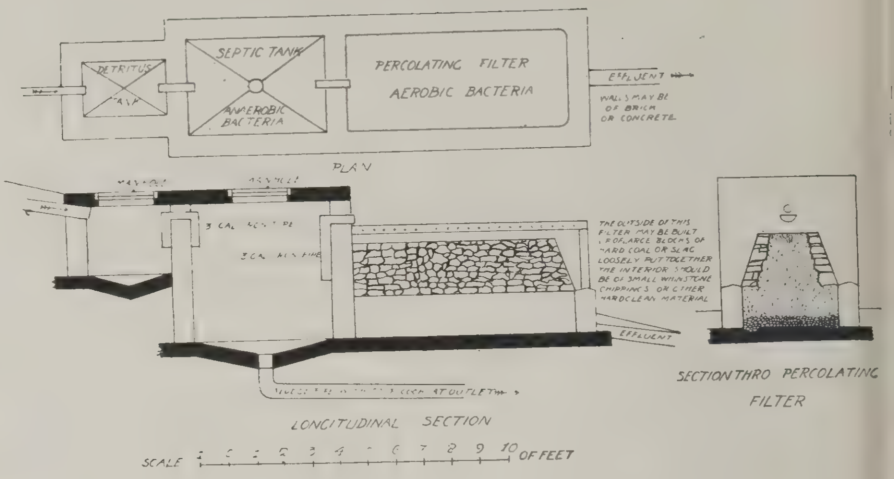
"SATYRANE" writes: "What would be the most suitable means of taking away the internal 9in. brick wall, as indicated on the accompanying sketch, in order to throw the passage to the dining-room, the super-structure to remain as it is, and a girder to take the place of the wall removed? The wall runs up to the roof and carries a floor. Kindly give also dimensions of girder recommended."



—Further particulars are essential to a definite answer. Assuming, however, that the floor joists above the dining-room and the passage both have a good bearing upon the wall to be removed, and that their ends are solidly built in, a possible course will be to lay timber sleepers or sills along the floor of the dining-room and passage parallel with the wall to be removed, at a distance of about 2ft. from it, each sill carrying 4 or 5 dead shores, supporting a longitudinal timber head wedged up against the first-floor joists. Above each dead shore a needle will penetrate the upper part of the wall over the first floor (see sketch). By this means the temporary support of floor and wall will be provided for. If it is desired that the girder should not project below the ceiling, the dead shores must penetrate the first floor and support the needles direct, the floor being independently supported by a lighter system of floor-strutting, so that the ends of the joists may be cut to fit the new girder. If there is difficulty in getting the girder in afterwards (as appears likely) it should be brought in before erecting the dead shores. The wall should now be chased into at the ends sufficiently to build suitably proportioned piers at either end to take the bearing of the new girder. The remainder can then be pulled down and the girder placed in position, which may be readily done from the passage side after cutting away for the new doorway and before closing up at the other end. The wall above should be pinned up and wedged in slate and cement, and after time has been given for setting, it should be allowed to take its bearing gradually by loosening the wedges of needles and dead shores. As to the proportion of the girder, taking the floor load at ¾ cwt. per ft. super., and assuming the storey above as 9ft. high, a distributed load of about 16 tons has to be provided for, to meet which a convenient section or group of sections may be selected from the manufacturers' tables. The new piers must be proportioned for 8 tons each, according to the materials used, or stanchions standing within the room and cased to form columns may be effectively used with slight alterations of the method indicated. G.



Biological Sewage Tank.


DETRITUS TANK
SEPTIC TANK
ANAEROBIC BACTERIA
PERCOLATING FILTER
AEROBIC BACTERIA
EFFLUENT
WALLS MAY BE OF BRICK OR CONCRETE
PLAN
THE OUTSIDE OF THIS FILTER MAY BE BUILT OF LARGE BLOCKS OF HARD COAL OR SLAG LOOSELY PUT TOGETHER THE INTERIOR SHOULD BE OF SMALL WHINSTONE CHIPPINGS OR OTHER HARD CLEAN MATERIAL
EFFLUENT
LONGITUDINAL SECTION
SECTION THRO PERCOLATING FILTER
SCALE
9
10
OF FEET

BIOLOGICAL SEWAGE TANK

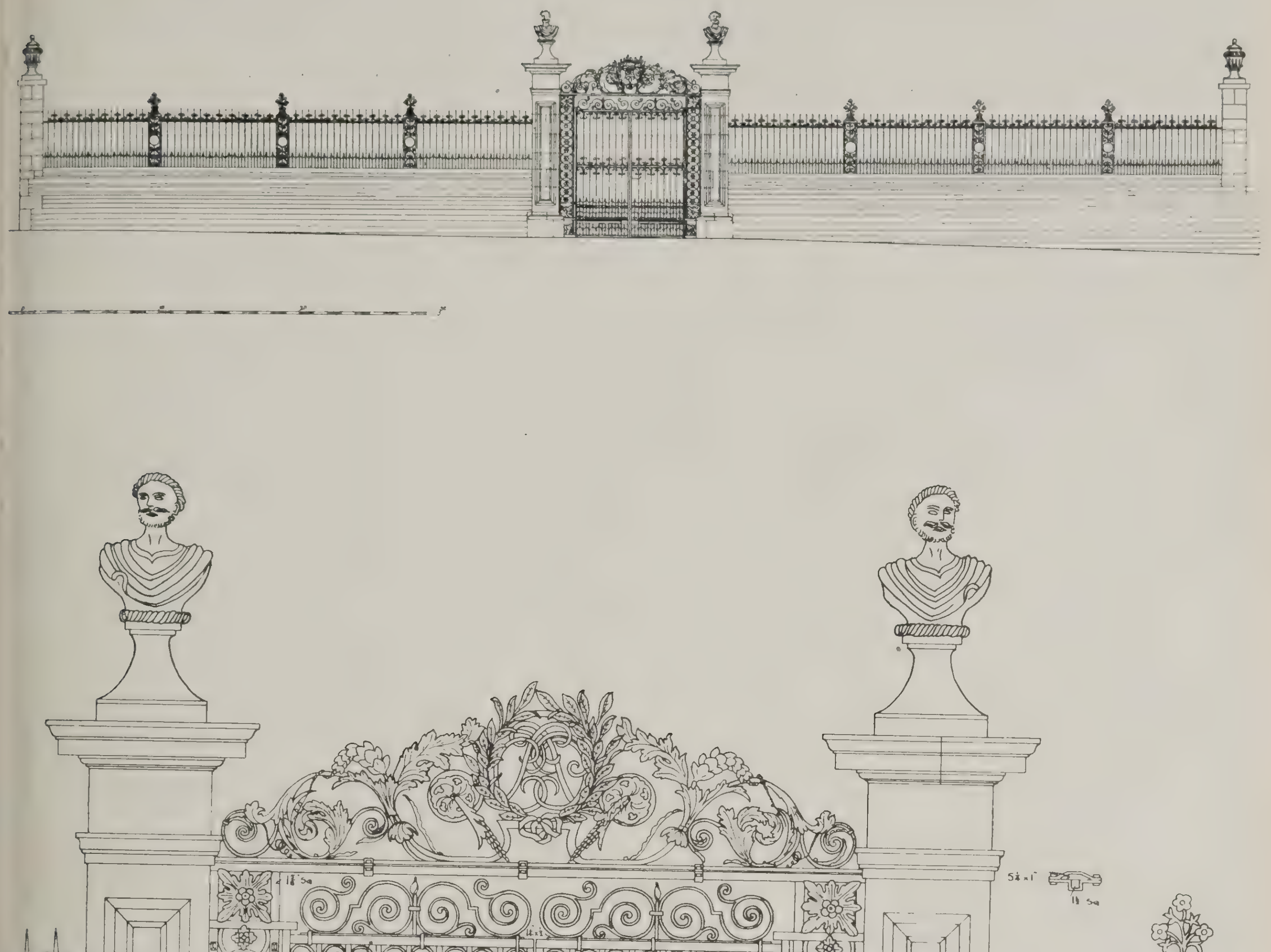
NATIONAL writes: "The accompanying drawing shows a design for the biological treatment of sewage in Natal. Is this arrangement satisfactory? It is for the disposal of sewage from a residence occupied by about twenty-five persons."

—There appear to be several points in the scheme shown which are likely to cause trouble and to prevent the discharge of a highly purified effluent. Taking these points in order of importance, the most serious is the absence of any apparent provision for the aeration of the filter. It is usual to arrange this either by t provision of filter beds in duplicate wi a simple tipping device to distribute t sewage from the tank alternately on o or the other, or, if a single filter only provided, to arrange for the sewage to discharged at intervals by a syphonic co trivance, the object in either case bei to ensure alternate periods of contact a nest in the filtering material. It is al usual to admit air to the bottom of t bed, either by laying coarse material the or by ventilating tiles or perforated pip Continuous action results in choking, if it does not, the full bacterial acti does not take place, mechanical filt tion being all that can be looked f The arrangement of the tank is also ca able of improvement. It may be doubt whether the suggested method of rem ing sludge will be effective. Suffici ventilation must be provided for escape of any gases generated—if the d pipe supplying the filter were given open top thus would permit it, and if manhole were placed above this end the tank the open pipes could be used pumping sludge by a hose dropped ri to the bottom of the tank without turbing the scum containing bacte There is no occasion for much differe in level between intake and outgo tank. The capacity of the installation lower than it should be if all drainage connected. It is usual to allow 30 gall per head per diem, and the tank sho be sufficient for two days' storage. T filter should have one square foot tributing area for each 80 gallons per delivered. If, however, bath and s wastes are otherwise provided for, system shown may be capacious enou but if more than mechanical filtration required the distribution should amended as indicated above. It is p sumed that an interceptor and venti ing system is applied to the house dr before it reaches the tank. X

DETAILS, OLD & NEW.—XXV

Beauchief Abbey.

The Abbey of Beauchief (which deri its name from the Abbey of Bello Cap was founded near the end of the twe century, by Robert Fitz-Ralph, Ranulph, Lord of Alfreton, Norton, Marnham. It is supposed to have b built and endowed in expiation of the g of the donor, who was, according several ancient writers, one of the f knights who assassinated Tho a'Becket.



WROUGHT-IRON GATES AT BEAUCHIEF HALL. MEASURED AND DRAWN BY J. H. WILLMAN.

At the time of the Reformation (1536) the Abbey and surrounding district was sold for £223 to Sir Nicholas Strelley. About the middle of the seventeenth century the property passed by marriage to Edward Pegge, Esq., to whose descendents it belonged until the nineteenth century. It was this Edward Pegge who built Beauchief Hall. I cannot do better than quote from a description made by one of the family who owned the house. Apparently there was at one time a spacious outer greensward. Through a large pair of well-wrought iron gates (on each side palisadoed with iron) we enter into a garden on the south side of the house, and in a large walk through the middle of the garden are conducted to a noble pair of stone stairs, of nineteen greises or steps, at the head of which, entering through a pair of gates into a footpath, from which goes down stairs of nine steps, both east and west, into a paved courtyard, and from the same footpath continues our ascent up as many stone steps into a passage over a large stone arch (under which passeth a fair walk the whole front of the house), and under a balcony into the hall (the stairs all of stone and several persons may walk together in a breast up them; they are set with rails or banisters of good stone-work, and so is the head end of the garden along on each side of the stairs), and on a fair stone over the door leading into the hall is engraven, viz.:

Eben-ezer.
Haec domus ergo Deus stet honoris grata columna;
Nam domus et domini conditor ipse Deus
E.P. Maii 17, 1671.

The gate, with its palisadoed sides, is illustrated by drawings and photographs. There is no accessory of architecture that offers so much to the architect as iron, nothing more fictile to the play of art's fancies. Its use in this instance to rail off a space without offering too great an obstacle to the eye, is characteristic of the part it played in design in the seventeenth and eighteenth centuries. Characteristic, too, of the time is the concentration of ornaments—in the side panels, in the splendid overthrow wherein one may still decipher the monogram, E.P. Tijou was by this time (towards the end of the seventeenth century) beginning to influence the smiths of England in this design. His influence is noticeable in the fine repoussé work of the overthrow. Perhaps Mr. Starkie Gardner will throw some light on the country smiths in his forthcoming book.

J.M.W.H.

COMPETITIONS.

Manchester Art Gallery and Library.

At last week's meeting of the Manchester City Council the Lord Mayor said that an opportunity would be given to the public to inspect the designs for the proposed Library and Art Gallery on the Infirmary site after the Council had considered the report of the assessor, Professor Reginald Blomfield.

LIST OF COMPETITIONS OPEN.

OCTOBER 12. SCHOOL, COSELEY.—Designs are invited for a school to accommodate about 200 children. Particulars may be obtained from the Education Offices, Coseley, near Bilston.

OCTOBER 14. ALTERATIONS TO HOTEL, BRISTOL.—Plans are required for alterations at the Grand Hotel. Particulars may be obtained from Mr. F. A. Jenkins, 44, Corn Street, Bristol.

OCTOBER 28. WORKHOUSE EXTENSION, SALFORD. — Premiums £20 and £10. Limited to architects practising in Salford and district. Particulars from Board of Guardians, Salford.

OCTOBER 31. NEW TOWN HALL, MARYLEBONE.—Premiums, £100, £75, and £50. Assessor, Mr. Henry T. Hare, F.R.I.B.A.

NOVEMBER 30. TECHNICAL INSTITUTE, CARDIFF.—The Cardiff Education Committee invite architects to submit competitive designs and estimates for a technical institute to be erected in Cathays Park, Cardiff. Mr. J. S. Gibson, F.R.I.B.A., has been appointed assessor. Full particulars may be obtained from John J. Jackson, Director of Education, Educational Offices, City Hall, Cardiff, on deposit of £2 2s.

NOVEMBER 30. HOSPITAL, HASTINGS.—The Joint Committee of the East Sussex Hospital and the King Edward VII. Memorial Fund invite architects to submit competitive designs, etc., for the proposed new hospital. Mr. Edwin T. Hall, F.R.I.B.A., of 54, Bedford Square, London, has been appointed assessor. Conditions and instructions may be obtained from Mr. W. M. Rhodes, East Sussex Hospital, Hastings, on deposit of £1 1s. Premiums of £125, £75, and £50 are offered.

JANUARY 20, 1912. STATUE AT HAVANA.—Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to tl "Comisión Ejecutiva, Monumento General Antonio Maceo, Secretaria de I strucción Pública y Bellas Artes," Havan before January 20. The sum of 100,0 pesos (about £20,600) has been voted f the work. British sculptors proposing compete should first put themselves in communication with the Commercial I telligence Branch of the Board of Trad 73, Basinghall Street, E.C., where al further particulars (in Spanish) may seen.

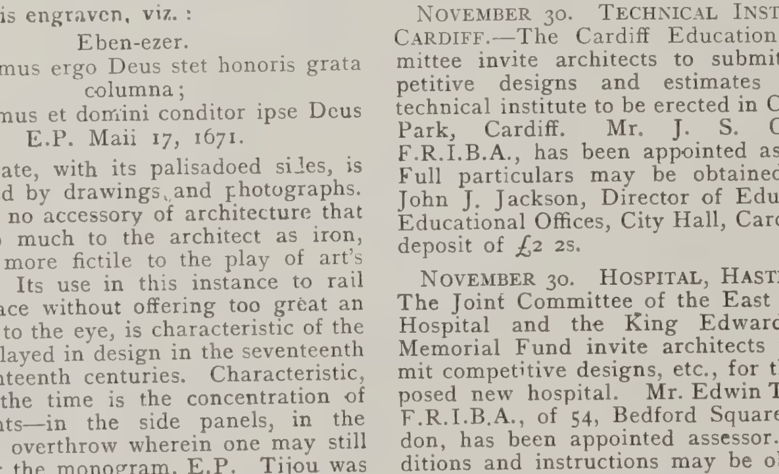
JULY 1, 1912. CITY EXTENSION SCHEM DUSSELDORF. — Premiums £1,000 a £375. Particulars from the Chief Burg master, Dusseldorf.

JANUARY 29, 1912. GOVERNME PALACE, MONTEVIDEO.—Designs are i vited for a Government Palace and a to improvement scheme. Premiums: For t former, £2,125, and £850; for the latt £1,060, £640, and £425. Conditions, et at the Board of Trade, 73, Basingh Street, E.C.

JANUARY 31, 1912. FEDERAL CAPIT CITY, AUSTRALIA.—Competitive desig are invited by the Commonwealth Australia, for the laying-out of the Fede Capital City. Premiums are offered follows: 1st, £1,750; 2nd, £750; 3rd, £5 Conditions, together with particula plans, and instructions, may be obtai at the office of the High Commissioner Australia, London. Designs must delivered by January 31st, 1912, to Ki O'Malley, Minister of State for Ho Affairs, Commonwealth of Australia.

No date. INFIRMARY EXTENSI ROCHDALE.—The Board of Managem of the Rochdale Infirmary invite ar tects practising in Rochdale prior January 1st, 1911, to submit pla designs, and estimates for extending present buildings. Conditions of c petition and instructions to architects, gether with other information can obtained on application to T. El Kershaw, Secretary, the Infirmary, Ro dale. An assessor has been appointed

No date. CENTRAL HALL, OFFIC AND CARETAKER'S HOUSE, BOLTON.— Lancashire and Cheshire Miners' Fede tion invite architects in practice on t own account within a radius of 25 m of the Town Hall, Bolton, to sub designs in competition for the ab The Committee of the Federation h appointed as assessor Mr. Jonathan Si son, F.R.I.B.A., of Bolton. The premi offered are £50 and £25 for the best designs in order of merit as judged by the assessor. Conditions and structions will be sent to architects application to Messrs. Fielding and Fe hough, Solicitors, 7, Fold Street, Bol accompanied by a deposit of one gui (returnable on fulfilment of conditions



Burford Priory for Sale.

It is announced that Burford Prior for sale. In the Cotswold country, nowned for its old-world houses, ther no property so famous as this. Volu have been written both as regards history and its architecture. Who, ind has not seen Waller's famous pict "The Empty Saddle" (the backgroun which is the courtyard of this old prio which shows Lord Falkland's horse ret ing to his home after the defeat of K Charles at the Battle of Newbury? S years ago Colonel B. de Sales La Terr acquired this estate and set about renovation.

CONCRETE AND STEEL SECTION.

(MONTHLY.)

The "Literature" of Reinforced Concrete.

The "literature" of reinforced concrete construction grows apace; and whereas, a few years ack, treatises on the subject were few nd dear, they have now become numerus, and in many instances are issued at ery moderate prices. We have before us batch of new books, British and foreign, hich either treat the subject as a whole—at is to say, aim at being complete eatises on reinforced concrete construcon in its general aspects—or take up articular points, such as the simplificaon of design which is now rendered posble by the provision of time-saving diarams and tables of carefully ascertained ata. These table-books—if so they may called for want of a better name—are, course, like all good things, liable to ouse; and consequently there are pracioners who affect to regard them with certain measure of distrust, the objecrs holding that a man ought to make s own calculations. This is no doubt ery true in a certain sense. Special cirmstances will require special calculaons; but, on the other hand, there are lculations which are of such common plication that they might as well be ade once for all; and to go on evolving em personally would be as futile a aste of labour as the repeated reconuction of the multiplication table, or of ts of logarithms. What is even more rious than such dissipation of effort is e liability to error in remaking the lculations.

Checking Calculations.

This liability is commented upon by Mr. H. Kempton Dyson in his introduction to a book of ta that has been prepared by Mr. John Gammon, B.Sc., and published, ce 10s. 6d. net, by Crosby Lockwood d Son, 7, Stationers' Hall Court, Ludte Hill, E.C., and 121a, Victoria Street, W. The first necessity, Mr. Dyson rerks, is that the architect and engineer all be in possession of rules for the ional design of reinforced concrete uctures; the second, that means should available for performing the necessary culations speedily and accurately. The ign of reinforced concrete members is difficult, and the mathematical treatnt is easy; yet the equations are gener- long and cumbersome, and any safe thod of shortening the process is an nixed boon provided it is used with discretion. On the whole, there is reason to disagree with Mr. Dyson's ement that "such diagrams and tables d to prevent errors in calculations; for re is not the same liability to error in rring to a table or diagram as in king calculations *de novo*, when it is so v to make slips, even to getting the imal point wrongly placed."

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e Utility of Diagrams.

Concerning the book that has suggested the foregoing observations, Mr. Dyson points out with fect truth that the data it gives are admirably arranged that they gener- give in one operation all the ination needed. "Thus," he says, "once having determined the bending moment on a beam, for instance . . . we can by reference to one of the diagrams see immediately the economical size, the limiting conditions, the area of steel, size of member required, etc. Other diagrams give the shear reinforcement; others, again, serve for columns; so that in one or two simple operations the design is done." He claims that they have the great merit of being exact. "If any approximation is made, it is so small that it could not have the slightest practical effect, the conditions of practice precluding our working to greater nicety, and indeed generally preventing our working so closely as the diagrams would permit." To the extent indicated, "Reinforced Concrete Design Simplified" seems to justify Mr. Dyson's praise, and to realise its title. A "thumb index," stepped on the fore-edge of the book, affords an instant clue to any required item, particularly with regard to the diagrams, of which there are no fewer than forty-one, besides a score of other illustrations.

More Labour-saving Diagrams.

Labour-saving diagrams are also a special feature of "The Practical Design of Reinforced Concrete Beams and Columns," by W. Noble Twelvetrees (Whittaker and Co., 2, White Hart Street, Paternoster Square, E.C.; 6s. net). They comprise a series of eight folding plates, which, being unbacked, could be easily detached and mounted on card or linen for convenient use. "All the formulæ for beams are based upon the straight-line theory, and their derivation is clearly traced, so that those who make use of them may know the exact purport of every equation. Numerous worked examples are included throughout the book, illustrating various methods of employing the formulæ, and sections are given showing the proportion of the members calculated. Six chapters are devoted to beams—their bending moments and stresses their horizontal reinforcement and web reinforcement. Columns and struts and the methods of calculation for column bases occupy two chapters; and complete floor calculation, permissible working stresses and materials and construction, each take up a chapter; while a useful note on the standardisation of reinforced concrete beam formulæ is contained in an appendix, in which a table lists the "apparently dissimilar" equations for the moment of resistance of reinforced concrete beams put forward by various authorities, showing them as written by author, as literally transposed by table of notation, and finally as reduced to standard form. The author points out that, with the exception of Prof. Talbot, "all the writers adopt the straight-line theory, and their formulæ all mean the same thing, although the fact is hidden by differing symbols and methods of algebraical treatment. If the various authors would adopt a standard code of notation, and consent in some cases to give up idiosyncrasies in the way of expression, there need be only one standard formula on the straight-line theory for the moment of resistance of reinforced concrete beams of rectangular section with single reinforcement." Mr. Twelvetrees advocates and illustrates the use of ratios instead of absolute measurements, as saving multiplication and division, and as facilitating "the preparation of labour-saving diagrams by whose aid calculations are reducible to an absolute minimum." We should have been glad, however, if it had been possible to incorporate in this useful volume the standard notation proposed by the Concrete Institute and adopted by the R.I.B.A. Committee on Reinforced Concrete, exactly in the form in which it is given in the Second Report (1911).

First Aid.

A book that in spite of the divergencies between American and British practice, contains much that will be of equal use on both sides of the Atlantic, is "Steel and Reinforced Concrete in Buildings," by Edward Godfrey, M.Am.Soc.C.E., and issued, price 2 dols., by the author, apparently at Chicago, although the address is not clearly indicated. The purpose of the book is very frankly and fairly stated. The aim is to help the man who wishes to design on a small scale where the employment of an engineer is unnecessary. "A large amount of this sort of designing is done, and very much of it is faulty. While it may be to the interest of the author and his class to discourage designing on the part of men whose training does not fit them to do it more intelligently, the fact remains that the work is done and will be done, and done very often by men who do not understand much about the principles of proper design. The aim in writing this book is to lay down the principles of correct and consistent design as applied to buildings, and to give simple rules and tables in designing," and "it is the author's intention, while indicating what may be safely done by one not thoroughly conversant with structural design, to indicate also the line beyond which such a one ventures at his peril and to the jeopardy of life and property." He believes that the book will be of special use "to architects . . students, and beginners," and from this not very complimentary classification it may be inferred that architects in the United States are as ill-informed on the subject, if not as indifferent towards it, as their brethren in Britain.

Rudimentary.

Some of the observations in the book, however, are so crudely elementary as to suggest an appeal to persons absolutely destitute of the bare A B C of building. Thus Chapter I. begins with: "The area of a foundation in contact with the soil will depend upon the bearing power of the soil." "Another feature that should, if possible, be taken into consideration in planning a foundation is the possibility of excavation in close proximity to the foundation. If excavation is made near a foundation carrying a heavy load, and if that excavation extends to or below the level of the foundation in question, the soil may flow and allow large settlement of the structure." Also fire burns and ginger is hot i' the mouth-la! This is information for babes and sucklings and backwoodsmen, but it does not necessarily vitiate the book, which, indeed, gives in small compass a compact mass of hints and memoranda that will not be despised even by the expert.

Stresses in Columns. The author has a neat knack of condensed statement, and this is seen not merely in the numerous well-constructed tables and graphic diagrams, but in such *obiter dicta* as these: "True reinforced concrete must of necessity be concrete reinforced or strengthened where the concrete is weak. Any system that combines steel and concrete where the steel is in compression is not reinforced concrete, but may be termed concrete-steel, a combination of the two materials assumed to be acting together. Concrete is strong in compression (confined or in short blocks), but weak in tension and shear. If steel is to reinforce concrete, it must do it by making up the lack existing in the concrete—that is, it must take up the tensile stresses and relieve the concrete of the same. There are tensile stresses in concrete acting as a simple post or column. This is scarcely recognised in books on engineering, though it is of tremendous importance, especially in reinforced concrete design. The cement mortar that is stringent in tension will make the strongest column. A bundle of thin straight wires would be useless as a column. But if the same wires were tightly bound about with a spiral wire, a heavy load could be borne by the same thin wires. Slender rods in a concrete shaft are very imperfectly and insecurely held together and held from buckling by the concrete. Hence a concrete column built with slender rods in it, with the idea that these rods will reinforce it, is most absurdly designed. In spite of the fact that such design is standard and accepted by nearly all authorities on reinforced concrete, it is absolutely dangerous and indefensible." In this book only the hooped column is considered worthy of use. The book is well suited for the pocket, being of slender proportions, and bound in flexible covers with rounded corners. As a book for beginners its simplicity and absolute lucidity of statement will render it invaluable in America. In our own country, architects and specialists will find it both interesting and suggestive, and they, of course, are not liable to the confusion that, in the case of a beginner, might arise from the peculiarities of American practice.

ELASTIC ARCHES.

CALCULATIONS INVOLVED IN THEIR DESIGN.

By EWART S. ANDREWS, B. Sc.Eng. (Lond.).

The calculations required for the design of steel and concrete arches present more difficulty than those involved in the design of ordinary girders and trusses, but this difficulty arises principally in the determination of the horizontal components of the reactions caused by the resistance of the ends of the arch to longitudinal movement; the aim of the present article is to explain as clearly as possible how the reactions are obtained for the usual cases that arise.

It is very necessary to realise that the chief difficulty is with the reactions, and that once these reactions have been found the calculation of the stresses follows exactly the same rules as apply to ordinary girders and trusses; in this respect the case of the arch is similar to that of the continuous girder.

Arches as usually constructed may be divided into the following types:—

(a) Arches with three hinges,
(b) Arches with two hinges,
(c) Arches with no hinges,

the calculations increasing in difficulty in the same order.

Arches with Three Hinges.

This case presents practically no difficulty, because the reactions can be calculated by the ordinary statical laws; that is to say, we have only to consider the equilibrium of the forces without an investigation into the deflected form of the structure. We shall in this article deal quite briefly with this case, because it is generally well understood. Take the case of an arch, AGC, Fig. 1, with hinges at the springings AC and at the crown G.

Now the bending moment at each of the hinges must be zero, because there is freedom of movement at these points. Since, according to Eddy's well-known theorem that "the bending moment at any point of an arch is equal to the product of the horizontal thrust and the vertical distance between the centre line of the arch and the line of pressure or equilibrium polygon," it follows that the line of pressure must coincide with the centre line at each hinge, i.e., it must pass through each of the hinges.

We can therefore from this rule either draw the line of pressure by graphical methods or else calculate the horizontal thrust by moments.

Consider the case in which an isolated load P acts at a point F on the arch at a horizontal distance $=\alpha l$ from the end A.

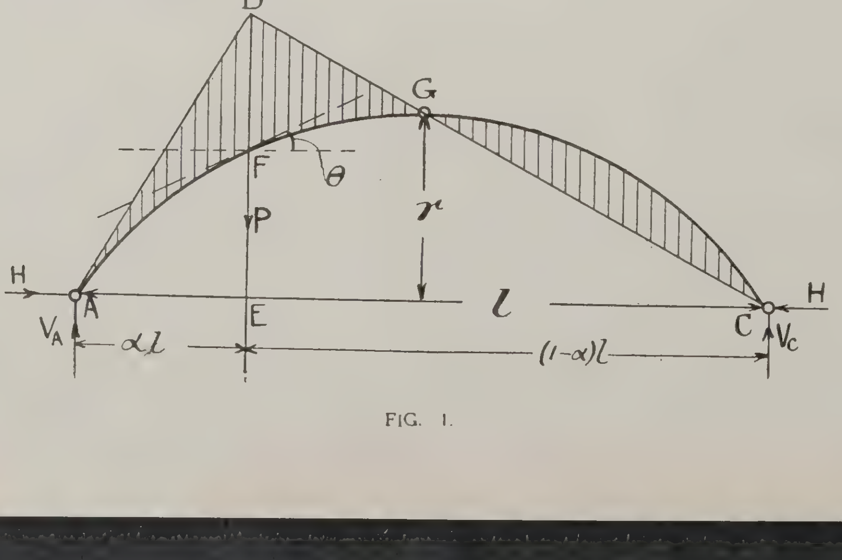


FIG. 1.

The reactions at A and C will be composed of horizontal forces H and vertica forces V_A and V_c respectively. The latte will be the same as the reactions on a beam AC with a load P acting at E.

By taking moments about A therefore we get:

$$V_c l = P\alpha l \qquad (1$$

$$i.e.\ V_c = P\alpha \qquad (2$$

Similarly

$$V_A = P\,(1-\alpha)$$

If the bending moment is zero at G we must have by taking moments about (

$$V_c \frac{l}{2} - Hr = 0 \qquad (3$$

$$i.e.\ H = \frac{V_c l}{2r} = \frac{P\alpha l}{2r}$$

The above equations determine th vertical and horizontal reactions for an number of isolated loads, the total re actions for the loads acting together bein obtained by adding together the separat reactions.

We are now in a position to calculat the stresses in the arch.

If the arch is a framed structure, th stresses can be found by the reciproca figure method once the reactions ar known; we shall give an example of thi in dealing with arches with two hinge If the arch is a solid rib, we proceed a follows: The shaded area gives the B.M diagram. Between C and G the thrust i on the inside of the arch, so that the por tion CG tends to bend outwards, and w call this bending moment *negative*; i this portion the tension side of the rib i the outside or *extrados*. and the com pression side is the inside or *intrados*.

Between G and A the forces are on th other side, and tend to deflect the rib in wards, so that the bending moment i *positive*, and the tension and compressio sides are reversed.

The stresses at any point such as F ar compounded of those due to a bendin moment equal to H×DF and a thru equal to the component of H parallel t the centre line of the arch at the poi F, i.e., H cos θ.

If therefore A and I represent respe tively the area and moment of inertia the rib at F, and d_c and d_T are the di tances from the centroid of the rib sectio to the compression and tension edges r spectively, we get:—

Maximum compression stress at

$$F = C = \frac{H\cos\theta}{A} + \frac{H\times DF\times d_c}{I} \qquad ($$

Maximum tension stress at

$$P = T = \frac{H\times DF\times d_T}{I} - \frac{H\cos\theta}{A} \qquad ($$

With uniform moving loads it may taken as a rough general rule that th maximum stresses occur when the spa is about half covered.

Arches with Two Hinges.

In the case of arches with two hing and with no hinges, we have to work fro a consideration of the deflected form the arch to get the horizontal compone of the reaction. Briefly, the procedu amounts to the following:—A certain tri value H of the horizontal reaction is take and one of the supports is assumed to removed, and the amount of horizont movement which would result is ca culated; the horizontal force which is r quired to make this movement zero is th found, and this is taken as the horizont force required.

The reasoning upon which the formu for this horizontal movement is obtain is either very long or else involves knowledge of the calculus; the longer fo avoiding the calculus will be found in t writer's "Theory and Design of Stru

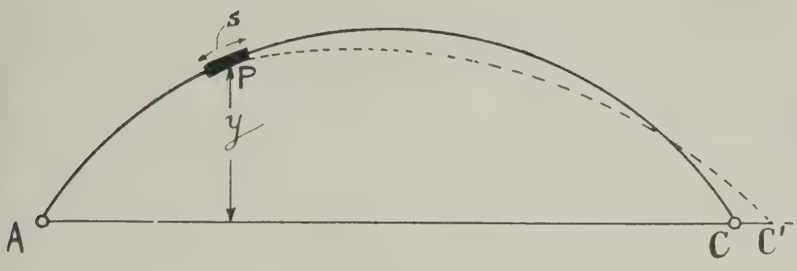


FIG. 2.

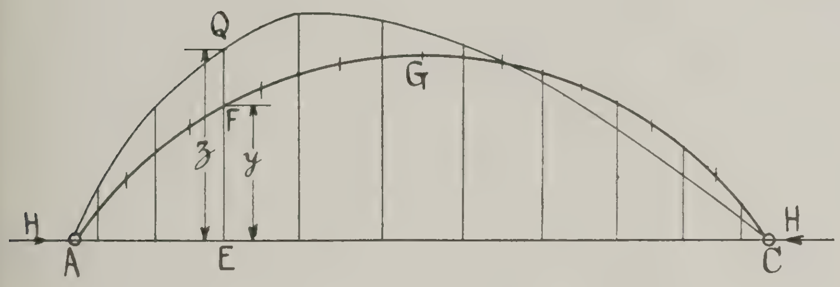


FIG. 3.

res.” The shorter form based on the lculus will be found in the leading text ooks, of which particular mention might made of Johnson, Bryan and Turneare's Modern Framed Structures.”

If s represents a very short length of the ch at the point F, and B is the bending oment on the arch at this point, then the nount of movement CC^1 of the end C, sumed free to move, due to the deforma- n of the portion s, can be shown to be ry nearly equal to $\frac{Bys}{EI}$, where E is oung's modulus and I is the moment inertia of the arch at the point F.

The total movement of the point C due the deformation of the whole arch will erefore be equal to the sum of all these aall movements. This is written as fol- ws:—

Total movement of C

$$=\sum\frac{Bys}{EI} \qquad (6)$$

Now let AQC, Fig. 3, be the bending oment diagram for the load system act- g on the arch considered as acting upon freely supported beam of span AC. The nding moment B acting upon the arch the point P will be the difference tween the moment z given by the dia- am AQC and the moment of the hori- ntal thrust H about the point P.

$$\therefore B=z-Hy \quad - \quad - \quad - \quad - \quad - \quad (7)$$

Since therefore in the arch the actual ovement of C must be zero, we have

$$\frac{(z-Hy)ys}{EI}=0 \quad - \quad - \quad - \quad - \quad (8)$$

may be assumed as constant, so we may ite:—

$$\frac{(z-Hy)ys}{I}=0$$

$$\text{.e.}\quad \sum\frac{yzs}{I}=\sum\frac{Hy^2s}{I}=H\sum\frac{y^2s}{I}$$

$$\therefore H=\frac{\sum\frac{yzs}{I}}{\sum\frac{y^2s}{I}} \quad - \quad - \quad - \quad (9)$$

This is the fundamental equation for arch rib with two hinges.

If, as is fairly common, the rib is of nstant section throughout, I will be con- nt, so that the equation becomes:

$$H=\frac{\Sigma yzs}{\Sigma y^2s} \quad - \quad - \quad - \quad - \quad (10)$$

The summation Σyzs may be called the oad arch sum,” and Σy^2s may be called the “arch-square sum.” In some special cases these summations may be found by mathematical means; we will deal with some of these later.

Graphical Treatment.

When these summations cannot be found by formula, they are best found graphically as follows:—

Divide the arch rib up into a convenient number of equal parts (10 to 15 parts are usually enough) and draw the mid-ordinate of each part.

Then measure the ordinates y of the arch and the ordinates z of the bending moment diagram, tabulating the result as follows:

Division No.	y	z	y^2	yz
Totals				
			Σy^2	Σyz

Then

$$H=\frac{\Sigma yz}{\Sigma y^2}$$

The summations themselves can be found by graphical construction, but this construction requires great care to get accurate results, and probably takes more time than the direct summation.

Directly H has been calculated in the above manner, the procedure to find the stresses is exactly the same as for arches with three hinges. In certain cases the reaction can be found by means of what is known as a “reaction locus.” This will be dealt with in a subsequent article.

Framed Arches with Two Hinges.

Where the arch is a framed structure instead of an arch rib that we have been considering, a similar procedure is adopted.

The stresses are first found in the arch members, neglecting any horizontal forces in the hinges, i.e., replacing one hinge by a roller bearing.

Let S^1 be the stress in any member found in this manner and l be its length and A its cross-sectional area. Next find the stresses in every member for a unit horizontal force acting at the hinges.

Let u be the stress for the unit horizontal force in the member that has the stress S^1. Then

$$H=\frac{\sum\frac{S^1ul}{A}}{\sum\frac{u^2l}{A}} \quad - \quad - \quad - \quad (10)$$

A new stress diagram with this value of H is then drawn to get the true stresses.

Fig. 4 shows an example of this.

(*a*) shows an arch roof-truss hinged at the ends, the loads being in tons.

The stress diagram (*c*) is first drawn for the vertical reactions only; this is equivalent to assuming one of the hinges replaced by a roller bearing. This diagram gives the value of S^1 for each member.

Taking 10 tons as a unit horizontal load, the diagram (*b*) is next drawn, the load 01 being the only external load; in this diagram of course the points 1, 2, 3, 2^1 1 coincide. This diagram gives the value of u for each member. In these calculations the cross-section of each of the members has to be assumed beforehand. The value of $\frac{S^1ul}{A}$ and $\frac{u^2l}{A}$ are next calculated for each member, and the corresponding quantities are all added together, thus enabling H to be calculated according to equation (10). In these summations due allowance must of course be made for the sign of the stress.

In the present case this calculation gives H = 16.7 tons. A new stress diagram (*d*) is then drawn from this value of H (i.e.

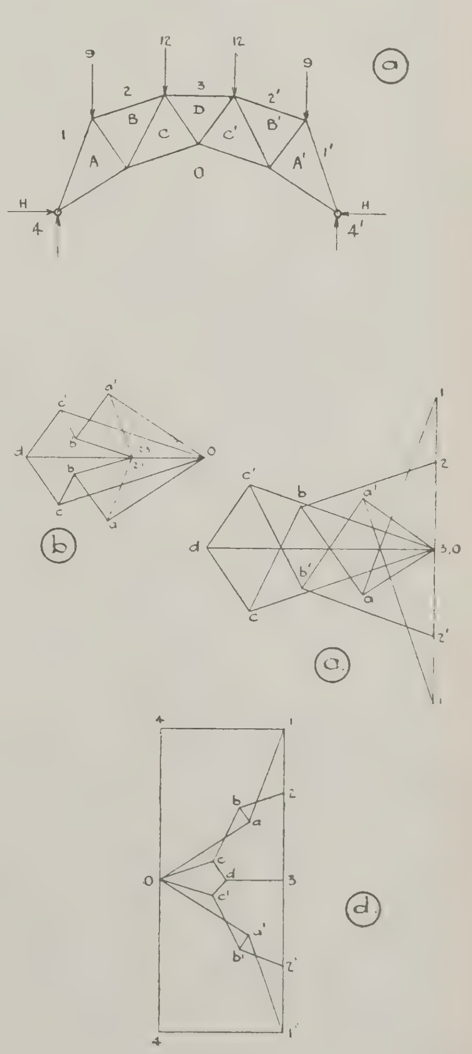


FIG. 4.

$1-4$, $1^1-4^1=16.7$ tons), and from this the stresses in the arched truss are found.

In place of making the summations, the value of H may be obtained graphically from diagrams (*b*) and (*c*) by means of "displacement diagrams," but this construction requires very great care and saves little, if any, time.

(*To be continued.*)

THE PROBLEM OF ELECTROLYSIS.

The possible danger to reinforced concrete structures from electrolysis began to be frequently mentioned five or six years ago. Since then many careful laboratory studies have been made and the results published. These experiments not only review and confirm the conclusion of previous experiments, that electric currents will cause failures in reinforced concrete, but they throw light on several matters not previously made clear. These are, briefly, the resistance to electric currents, or conductivity of concrete; the weakening effect, if any, on concrete, of passing electric currents through it; the possible efficiency of insulating coatings applied to the concrete or the reinforcement; the possible value of mixing or impregnating the concrete with some non-conducting material, etc. The experiments, in short, tell us more of the possibilities of overcoming the danger of electrolysis than of the certainty and nature of this danger, and for this reason they are particularly interesting to engineers.

It is certain that electric current may cause failure in reinforced concrete; and the nature of this failure is not chemical, or at least not principally chemical disintegration, but is mechanical. Electrolytic corrosion of the reinforcement occurs, by which one volume of the original metal becomes 2.2 volumes of another substance, and this increase in volume ruptures the concrete surrounding the metal. It is clear that dry concrete is a fairly good insulator, and that its conductivity increases with the presence in it of moisture, and with the nature of the salts in solution with this moisture. It is further clear that the passing of an electric current through concrete does not materially affect its cohesive properties; that is, its compressive strength is not decreased by such action. These conclusions may be modified by further test data, but it is reasonable to believe that they will not in the main part be reversed.

With the nature of the danger to reinforced concrete of electric current thus definitely defined, one is in position to study methods of avoiding the danger. One method is to keep the iron negative in respect to the concrete, so that the current will be from the concrete to the reinforcement. This will accomplish the result desired; but it is a laboratory possibility only to secure the requisite conditions. Another method, which is likewise a laboratory possibility only, is confining the current to alternating currents of equal positive and negative wave forms. A third method, which seems at first glance more promising as a practical resource, is to render the concrete non-conducting by filling the pores with some non-conductor or by an insulating coating. Tests made with blocks treated by the Sylvester process (soap and alum) showed no particular value for the treatment. The possibilities for an insulating paint appear small in actual construction work: the concrete must be dry before the insulation is applied, the material must be completely insulated, and the insulation must remain intact and in good condition.

The three methods so far referred to for overcoming electrolysis are based upon the idea of either changing the nature or direction of the current or of securing a concrete which will be a perfect insulator. The next thought naturally is: Can the reinforcement itself be protected? Two possibilities of this nature suggest themselves. One is to coat the steel with some metal which will make the conduction of the current from the steel to the concrete metallic instead of electrolytic; the other is to cover the steel with an insulating compound which will cut off all flow of current from the reinforcement to the concrete. The tests made to determine these possibilities give rather negative results. They indicate that an aluminum plated reinforcement may quite likely solve the problem, and that a paint has yet to be found which will be a perfect permanent insulator, assuming that coating reinforcement with paint has no other objections.

At this point it is instructive to notice the results of the tests made to determine the effect of a paint coat on the shear or holding power of steel embedded in concrete. It seems likely that engineers will be loth to give up efficiency in holding power to the extent indicated, for anything less than a very serious menace not otherwise possible to escape.

Summarising the facts which are presented by these laboratory studies, we obtain the general conclusion that electric current can cause electrolytic corrosion tending to destroy reinforced concrete, and that no practicable means as yet offer themselves for preventing this corrosion where the dangerous current is present. Theoretically this appears to be somewhat appalling; practically it is not easy to work up a very high degree of terror over it. Like the corrosion of steel skeleton buildings so frequently prophesied some years ago, the possibilities for trouble are great, while the probabilities are negligible. An insulated reinforced concrete structure is not so very easily got at by electric current in a manner to cause grave danger. In the nature of things, too, the places where dangers will occur are those where considerable damage in detail can occur without injuring much the integrity of the structure as a whole.

In this connection, the following conclusions of the standing committee on the rusting of steel in concrete, set forth in their draft report to the Concrete Institute, may be conveniently recalled:—

"Reinforced concrete will last as long as plain concrete in any situation, provided that certain special precautions are taken during its construction. The precautions to be taken are as follows:

"The materials (cement, sand, and stone) must be of good quality. They must be most carefully and thoroughly mixed and scientifically proportioned, so as to be practically waterproof and air-proof. The mixture must be fairly wet, and must be well compacted into position so as to minimize voids. The aggregate should be as non-porous as possible, and any aggregate which is known to have a chemical action on steel should be avoided. The aggregates should all pass through a $\frac{3}{4}$in. mesh. The concrete covering should in no case be less than $\frac{1}{2}$in.; and it is suggested that if round or square bars are used, the covering should not be less than the diameter of the bar. In structures exposed to the action of water or damp air, the thickness of covering should be increased at least 50 per cent., or the size of the aggregate should be reduced so as to insure a dense skin. In the case of structures exposed to very severe conditions, the concrete might be covered with some impervious coating, as an extra precaution.

"The reinforcement should be so arranged that there shall be sufficient space between one piece and its neighbour to allow the concrete to pass and to completely surround every part of the steel. All steel should be firmly supported during the placing of the concrete, so as to avoid displacement. It should not be oiled or painted, and thick rust should be scraped and brushed off before placing."

THE AUSTIN DAM COLLAPSE.

On Tuesday last week about 1,000 persons were either drowned, crushed, or burned to death in the lumber town of Austin, Pennsylvania, through the bursting of a dam a mile and a half above the village, and the subsequent explosion and ignition of the town's natural gas supply, whilst 500 buildings were carried away in a mass of tangled wreckage, leaving scarcely a score of houses standing.

The dam was 530 ft. long and 39 ft. thick. The recent heavy rains had filled the reservoir to its maximum capacity, forming a lake a mile and a half long, half a mile wide, and 45 ft. deep. Suddenly, without any warning, at two o'clock in the afternoon the dam's anchorage gave way and the breastwork fell with a crash. 5,000,000,000 gallons of water plunged through the opening into the Sinnemahoning valley, forming an avalanche 50 ft. high and 1,000 ft. wide, with the terrible result recorded above.

Commenting on the catastrophe, a correspondent of the "Times" says: "The history of the dam is an unfortunate one. Last year, when the filling with water was started, serious cracks and subsidences took place, and these were stated to be due to two chief reasons—the placing of the concrete under hydraulic pressure too soon after its erection, and the presence of considerable leakage under the foundations. Since then, it seems, reinforced strengthening has been carried out.

"In this country failures of dams and reservoir embankments have, fortunately, been rare. This is largely due to a very stringent adherence by engineers to the accepted forms of design, forms tried and found trustworthy by ample experience. Above all things it has been considered essential that the barrier should be watertight itself, and that its extent should, so far as practicable, cut off all channels of escape in the rock on which it is founded. In a country such as ours, where the rainfall has to be carefully conserved, this is very important from the point of view of supply, but even greater importance attaches to its insistence when the stability of the dam is considered. In America less attention is directed to this subject, and leakage is often accepted and balanced by the provision of greater reservoir capacity. The stopping of leakage is generally simply a matter of capital expenditure, but the English engineer considers that water-tightness is worth the additional expense involved, whilst only too often the American is obliged to save the cost and accept the inevitable leakage under shallow foundations. The difference in stability of a masonry dam without hydraulic pressure under its base and one with it is obvious. . ."

E DESIGN OF REINFORCED CONCRETE POLES.

les for carrying telephone, telegraph, electric transmission wires are acted by the vertical loads of the wires the ice that may accumulate upon , and by the horizontal wind loads on wires and the surface of the pole f. These loads must be taken into ideration in the design of reinforced ete poles.

e function of the pole is that of a can- er beam, rather than a column. The nal forces are due to dead ice, and loads. The weight of the wires and coating of sleet, together with the ht of cross-arms, insulators, and the itself, is a vertical load, which the carries as a column. The pressure e wind on the wires and upon the is assumed as acting horizontally and right angle with the line. These s act together upon the pole; but the horizontal forces are applied at wires, and therefore near the top of ole, their effect is much greater than ffect of the vertical forces.

the case of a pole placed at a bend in ine, there must be added to the fore- the horizontal component of the ten- in the wires. Again, in case the sags ljoining spans are not so adjusted as alance the tension of the wires on r side of the pole, there will be an lanced pull in the direction of the Unbalanced tension may also be uced by unequal ice and wind loads ljoining spans.

it is further assumed that all, or part, e wires may be broken by excessive ng, faulty material, or by burning, the pole must withstand a longitu- force equal to the tension in the in the unbroken span. This condi- is very unusual, and is not generally into account on intermediate poles. e usual attachments for fastening wires to the insulators have not suffi- strength to develop the ultimate of the wire, and therefore a broken would pull through into the adjoin- spans before exerting its maximum on upon the poles. As a matter of my, it is usually better to dead-end wires and poles at intervals, rather make every pole and attachment of ient strength to dead-end the line.

addition, it can be shown by a rather licated mathematical demonstration owing to certain properties of the ary curve, a slight bending in a num- of poles will balance the tensions in ning spans.

itting from consideration the effects rnadoes and cyclones, it is necessary termine, or assume, the maximum ity of the wind, for general practice, r any particular locality.

nerally, a deposit of ice of about ½in. ness may be expected at irregular in- ls. Greater thicknesses are some- encountered, but the heavier deposits are usually snow-ice of lighter weight, and with less adhesion to the wires. It may reasonably be expected that a portion, at least, of these larger accretions will be broken off by the rising wind, so that the final average load on a span will be approximately equivalent to a uniform thickness of ½in. of clear ice.

Inasmuch as the ice and wind loads are both acting under maximum loading, some reasonable combination must be assumed. Since the surface exposed to wind pressure is the diameter of the ice-covered wire, if no ice load is present it would be necessary to assume an extremely high wind velocity to obtain a maximum load equivalent to a moderate combined load.

In telephone and telegraph practice it is desirable that the wire spacing and the sag be kept as small as possible. This requirement immediately places a limit upon the length of span, since the wires require support at frequent intervals. In power transmission, however, the length of span may be much greater, as it is not necessary to place the wires close together, and the sags may be increased. Economically speaking, the span should be as great as the proper spacing of wires and the necessary clearance between the wires and the ground will permit.

While it is common practice to use guys, in open country, both normal and parallel to the line, in populated districts the use of guys is necessarily restricted, and in any case constitutes a nuisance and expense in maintenance.

If the reinforcement metal is concentrated in four equal areas, a rod to each corner, a square pole will be equally strong, either parallel or normal to the line. Other or finer distribution of metal, with equal strength in both directions, necessitates an excess of material over that required for the forces normal to the line. When the metal is concentrated, the fabrication of the reinforcement into a unit frame, and also the concreting operations are more easily accomplished. Ample web reinforcement assures a firm unyielding unit during concreting, as well as provision against diagonal stresses.

In other fields of reinforced concrete work high-carbon steel with a high elastic limit, and a correspondingly richer concrete, are being used, permitting higher working stresses in design. If, in such work, high-unit stresses can be used, with a large percentage for impact, it would seem entirely reasonable to use correspondingly high working stresses in pole design, since the severe conditions of loading occur infrequently.

The most commonly used mixture is 1:2:4 Portland cement, sand and broken stone. It should be mixed wet, using carefully selected materials. If conditions make it desirable to use high working stresses, a month or more should elapse before new poles undergo severe tests.

Since in solid poles the loading produces a low compressive unit stress in the concrete, a considerable area of concrete might be omitted, or, theoretically, the economical section would be a hollow one. The increased weight of a solid pole renders it more difficult to handle, and a hollow pole would therefore be more economical in erection. Further, the sides of the pole resisting the bending stress normal to the line might be at a greater distance from the centre than the sides perpendicular to the line.

There are, however, certain objections to the use of hollow or unsymmetrical sections. The former are difficult to make properly, and the form cost exceeds that for solid sections.

It is desirable as a matter of appearance, since sharp corners are difficult to make and subject to accident, that all such corners be chamfered or rounded. The minimum diameter, or width, at the top may be made 6in. for small poles. In any case care should be exercised, in determining the taper and reinforcement, that no weak sections occur at some distance above the ground level.

Messrs. R. D. Coombs and C. L. Slocum, in a paper (from which these extracts are derived) prepared for an American Association, have given designs for poles of three different capacities, and as a comparison two sets of stresses were assumed for each capacity. All poles are square. The heavy trunk line pole has six arms with ten lines each; the light pole, three arms for six lines each; the medium pole, four arms for eight lines each. The total bending moment at the ground line, the stresses and quantities are shown in the accompanying table.

All the poles were designed for the same loads, ½in. of ice and 8lb. per square foot wind pressure thereon, and 13lb. per sq. foot wind pressure on the pole.

The web system consists of a spiral of wire placed outside the rods and securely attached to them, and in occasional horizontal ties.

The poles were designed to withstand the total force perpendicular to the direction of the line, and good practice apparently justifies an equal, or nearly equal, strength parallel to the line.

The linear variation of stress, and the usual methods of computing beams doubly reinforced, were used.

The reinforcing rods were assumed to be of a mechanical bond type, particularly in the designs with high-tension steel, although the frequent attachment of the web system would doubtless be of assistance in developing the necessary bond.

The extreme fibre stress in concrete in compression in these designs is about the one month value of the crushing strength of concrete, and it is more than probable that such poles would have attained a greater age before they would be tested under the actual conditions for which they were figured.

LOADS AND STRESSES AT GROUND LINE, AND QUANTITIES OF MATERIALS.

Length, Ft.	Bend. Mom. Ft. Lb.	Width, In.	Span, Ft.	Edge Dist. for Steel, In.	Reg'd A. for Steel, Sq. In.	Unit Ten. Stress, Steel.	Unit Comp. Stress, Steel.	Gross Per Cent., Steel.	Per Cent. Tension Steel	Ext. Fibre Stress, Concrete.	Cu. Ft., Concrete.	Wt., Steel Rods.	Webbing, Spiral.	Webbing, Ties.
30	89,460	12.6	100	1.75	3.38	40,000	19,100	5.60	2.40	1,960	23.0	660	270	47
30	89,460	14.5	100	1.50	2.72	25,000	20,800	3.38	1.44	1,470	28.0	540	280	50
30	49,450	12.0	150	1.25	2.64	24,000	12,000	5.25	2.04	1,100	19.0	550	300	55
30	49,450	9.0	150	1.25	2.25	40,500	21,700	3.33	3.22	2,400	10.0	493	260	45
35	84,034	12.0	120	1.50	2.78	40,000	18,000	4.95	2.20	1,840	39.0	632	320	60
35	84,034	15.0	120	1.50	3.32	25,500	12,000	4.12	1.64	1,130	25.0	300	330	65

CONCRETE WALLS AT ROSYTH DOCKYARD.

The "Times" reports that the three walls, to the east, west, and south, which are the main features of the submarine basin at Rosyth Dockyard, are now completed. They are built of large blocks of concrete, with granite facings, and it is estimated that over 100,000 yards of concrete and about 4,000 tons of granite have been used. A good deal of rock blasting will have to be done within the basin, but the work is likely to be finished well within contract time. In connection with the construction of the large graving docks the north wall of the "Dreadnought" basin is now being built of large concrete blocks similar to those used in the formation of the submarine basin, and part of the wall is up to within 10ft. of the quay level. A large amount of blasting will have to be carried out in order to provide sufficient depth for the graving docks, as a mass of solid rock has to be cut through. Already about half a million tons of rock have been excavated from the site of the two docks and used for concrete. Sixty large monoliths have been or are being sunk to a depth of about 130ft. below the bed of the Firth for the outer sea wall. Little work has been accomplished in connection with the entrance lock: a cofferdam will have to be built before operations there can be started properly.

A NEW TYPE OF REINFORCED CONCRETE CAISSON.

A new type of reinforced concrete caisson for quays and wharves has been adopted at Rotterdam, in view of the fact that, owing to the underlying soil being composed almost entirely of sand, pile foundations are unfavourable.

On this page is reproduced a drawing which shows the construction. The caisson are built in sections 134½ ft. long, 32 ft. 9½ in. high, and 31 ft. 10 in. wide across the foundation. Each section contains 20 compartments separated by a longitudinal wall into two rows of 10 compartments. They are cast in wood forms on a raised platform alongside a basin or lock with sufficient water for launching, and when afloat are towed to the site and sunk by means of weights and water siphoned into the compartments. In order to guide them while sinking, a dovetail joint is made at the ends. For filling, a heavy metal plug was placed over four compartments, two in the front and two in the rear, and the water lowered half way by means of a pulsometer, after which concrete was poured into the front row of compartments; the back row being filled with sand by means of an elevator. The superstructure was built with a timber facing backed with concrete from low water up to about 10 ft. above high-water mark. The face of the caisson and quay is built on a batter inward from the bottom up. As a protection for the wharf, long piles were driven at the toe of the caisson, extending up to a point a few feet above the top of the upper planking. These piles were tied to short anchor piles by means of heavy timbers about 60 ft. long.

PRACTICAL STRUCTURAL MECHANICS

Every architectural draughtsman will admit as an abstract principle that an intimate acquaintance with structural mechanics is quite as essential to the production of the highest form of design as a knowledge of anatomy is to the sculptor. He knows that Gothic architecture is a living example of thrust and counterthrust, and that Brunelleschi, Bramante, Wren, and the master-minds of the Renaissance were not ashamed to call themselves engineers first and artists afterwards. But the student's enthusiasm for the axiom that the truest beauty is the most perfect adaptation of means to an end barely suffices to render palatable the condensed mathematical treatment of the average text-book; and he discovers only too frequently in the ordinary everyday work of the office that the half-understood rules which he has painfully acquired apply only to straightforward problems, and that, lacking the necessary knowledge of the principles upon which formulæ are based, he is unable to adapt them to varying conditions; so that he falls back upon rule-of-thumb, or that fatally easy "Provide £— for structural steelwork."

During the past three years successful efforts have been made at the Central School of Arts and Crafts, Southampton Row, under Prof. Lethaby, to present this important subject to architectural students in a more congenial practical form. A large amount of specially designed apparatus has been constructed which enables students to perform a complete range of practical experiments by which all rules and formulæ in ordinary use can be deduced and checked by actua measurements of the effect of stresses applied to models.

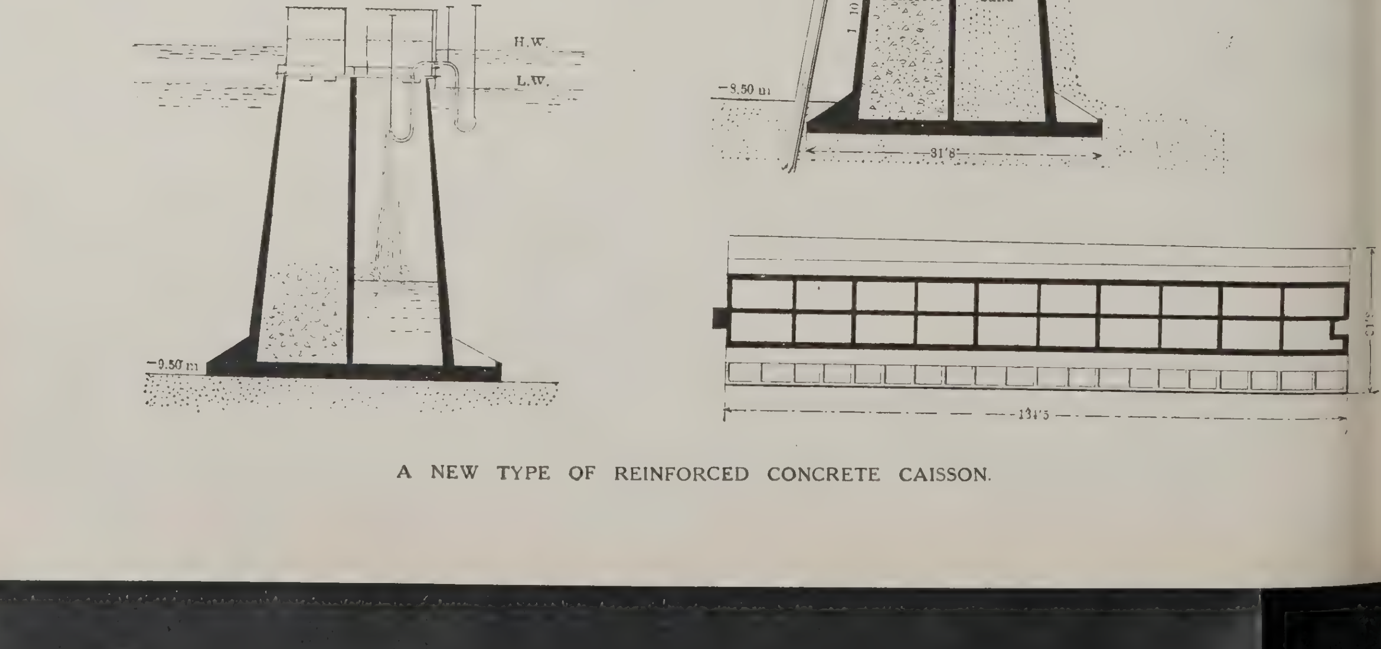
The subjects dealt with include the determination of stresses arising in and the stability of girders, columns, roof principals, arches, domes, buttresses, retaining walls, foundations, shoring, etc., and the students are encouraged to apply their knowledge to problems drawn from ordinary practice.

The experiments are co-ordinated with a series of explanatory lectures which wil shortly be published by Mr. Batsford in book form, enabling the instruction to be entirely individual.

The course has proved very popular especially with candidates for the R.I.B.A examinations, and it is proposed this year to form a separate advanced class with lectures on reinforced concrete. Mr Percy J. Waldram, F.S.I., is the instructor.

CALCULATIONS IN REINFORCED CONCRETE DESIGN.

From La Société anonyme de Publications industrielles, 20, Rue Turgot, Paris we have received a paper-covered book entitled "Calcul des Ouvrages en Béton en Ciment armé: Aide-Mémoire ave Barêmes," by N. de Tédesco. It set forth, in formulæ and in tables, the calculations necessary for the determination of the dimensions of all the elements o reinforced concrete design; forms of specification; the text of the official regulations controlling or affecting this system of construction; and a list of importan articles, etc., on the subject that have appeared in the journal "Le Ciment." Th book, in fact, comprises a very respectabl collection of data that will be found exceedingly useful by French practitioners and may possibly be of some service t foreigners, who, aiming at a comprehensive acquaintance with the subject, wil find here a fairly complete view of th main points of French practice.



A NEW TYPE OF REINFORCED CONCRETE CAISSON.

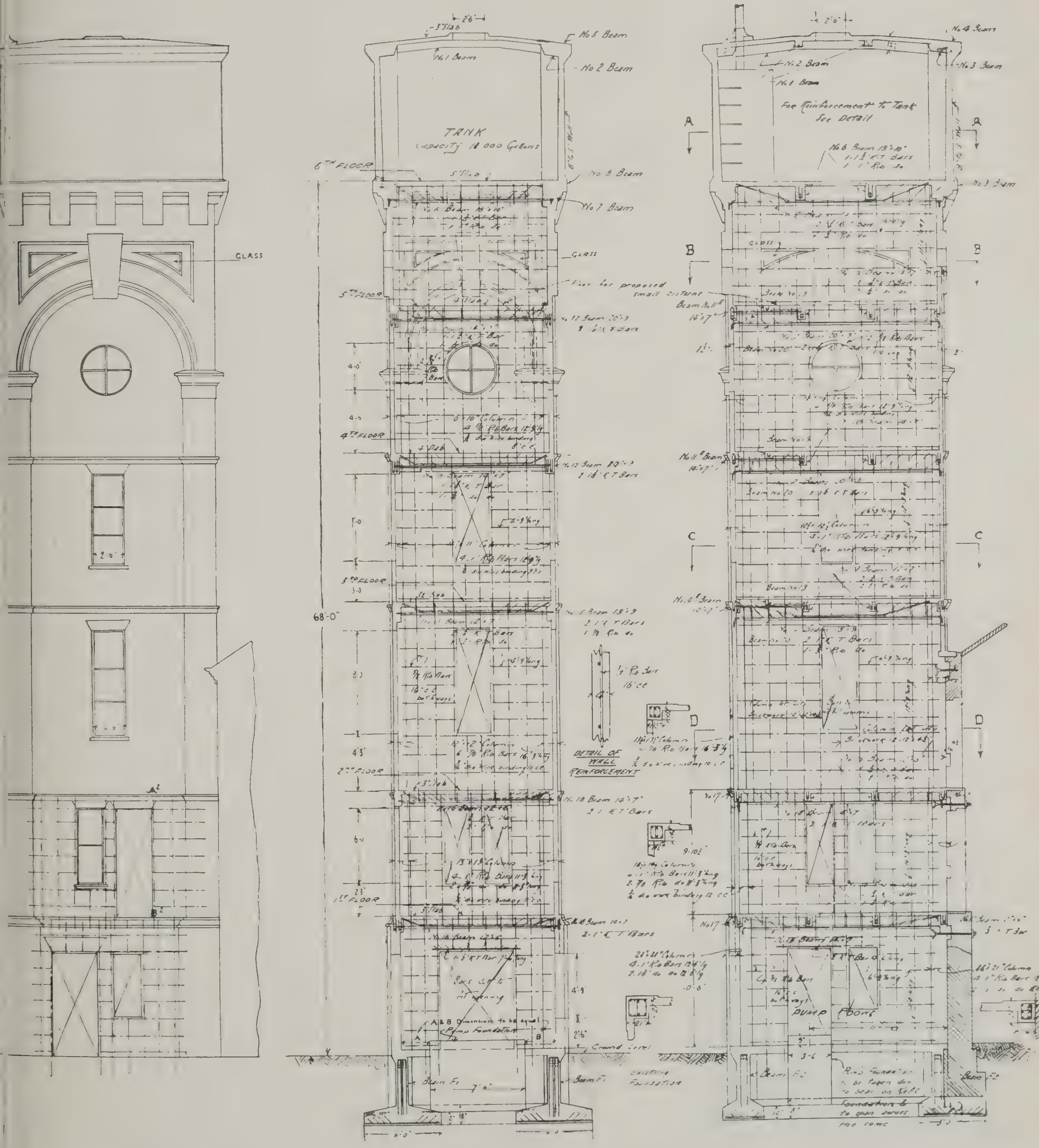
REINFORCED CONCRETE WATER TOWER.

The accompanying photograph shows a ,000-gallon reinforced concrete water wer in course of erection at Messrs. acardle, Moore and Co.'s brewery at ndalk, Ireland, the drawings repro-ced giving details of its construction. ferring to the photograph, it is of in-rest to point out that the scaffolding is pported by the tower itself, the shuttering being removed and re-used as each storey is added.

The floor of the tank is 70ft. above ground. The space beneath the tank and between the supporting piers has been filled in with 4in. walls, slabs, and floors, thus providing six rooms connected by iron staircases and used as offices, laboratory, etc. Pumping plant is installed on the ground floor, the water being pumped into the tank from an adjacent well.

The exterior architectural treatment of the tower is, in our opinion, not properly expressive of the construction, the arch with its huge keystone being especially open to criticism, in view of the fact that it does not support the tank, as it appears to do, but is merely a decorative treatment on the face of the concrete.

The tower has been erected by the Reinforced-Concrete Constructional Engineering and Contracting Co., Ltd., of North Shields, the architects being Messrs. Bland and Brown, of Harrogate, and the engineers Messrs. the Trussed Concrete Steel Co., Ltd., of Westminster.



Elevation. Section A′—A′. Section B′—B′.

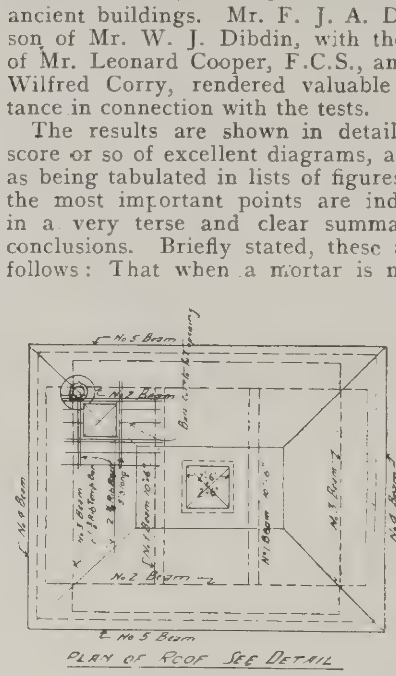
REINFORCED CONCRETE WATER TOWER AT DUNDALK, IRELAND.

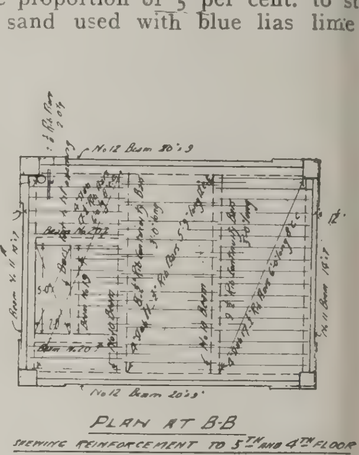
THE COMPOSITION AND STRENGTH OF MORTARS.

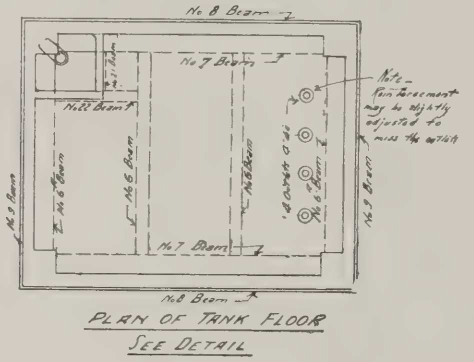
In the year 1907, Mr. W. J. Dibdin, F.I.C., F.C.S., was requested by the Science Standing Committee of the Royal Institute of British Architects to conduct a series of experiments on the composition and strength of mortars. The work involved the collection and examination of representative samples of materials—namely, limes, sands, and bricks, and the preparation from these of 828 briquettes for tensile strength, 828 blocks for crushing strength, and 120 pairs of bricks for adhesive strength; making in all 1,776 experiments; and in addition it was necessary to design and construct special modifications to the compound lever cement-testing machine for the purpose of effecting the crushing and adhesive tests, which modifications were effected by Mr. G. E. Moore, M.Inst.Mech.E. The results have now been published in a volume that has just been issued, price five shillings, by the Royal Institute of British Architects, 9, Conduit Street, Regent Street, W.

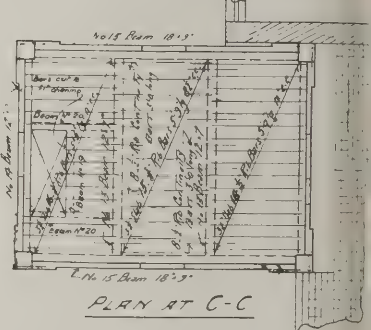
The materials upon which the tests were to be made were as follows: White chalk lime (95 per cent. CaO), with standard sand (Leighton Buzzard), fine sand (Charlton), pit sand (ordinary), Thames sand, and ground brick (grey Kent stock, not over-burnt, as commonly used in London buildings); Dorking greystone lime; blue lias lime from Nelson's, Stockton, near Rugby; mortars containing five per cent. of red London clay, calculated on the dry mortar, the sand being first mixed with the clay: the sands in all cases being as above enumerated. The brick tests for adhesion were conducted with stocks and Flettons. The tests for limes, mortars, and adhesion, were alike taken at one month, three months, twelve months, and two years. Additional tests were made with a series of mortars from ancient buildings. Mr. F. J. A. Dibdin, son of Mr. W. J. Dibdin, with the help of Mr. Leonard Cooper, F.C.S., and Mr. Wilfred Corry, rendered valuable assistance in connection with the tests.

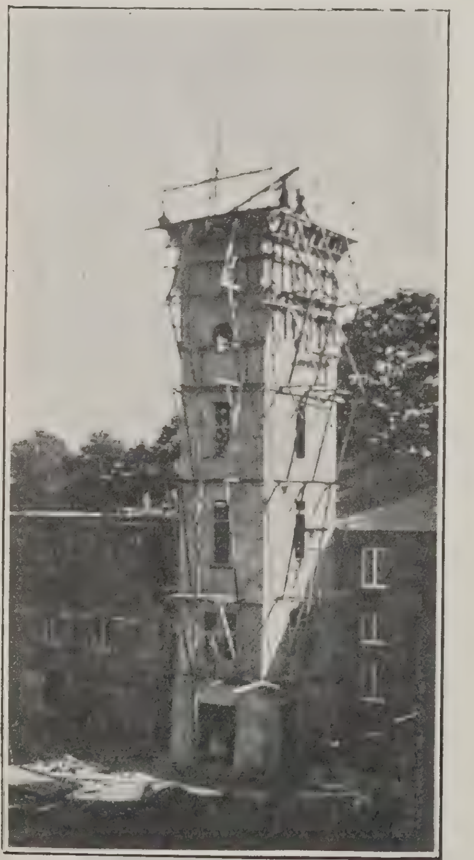
The results are shown in detail in a score or so of excellent diagrams, as well as being tabulated in lists of figures; and the most important points are indicated in a very terse and clear summary of conclusions. Briefly stated, these are as follows: That when a mortar is new or green it has a greater strength than wh dried, the moisture, by capillary actic giving a false strength that is not mai tained. Fine Charlton sand gave its b results with white chalk lime, and its wo with blue lias lime, and the addition clay was distinctly detrimental. Tham and pit sands gave far better results wi the lias lime than with the chalk limes, a there was no advantage from the additi of clay; but when this material was add in the proportion of 5 per cent. to sta dard sand used with blue lias lime



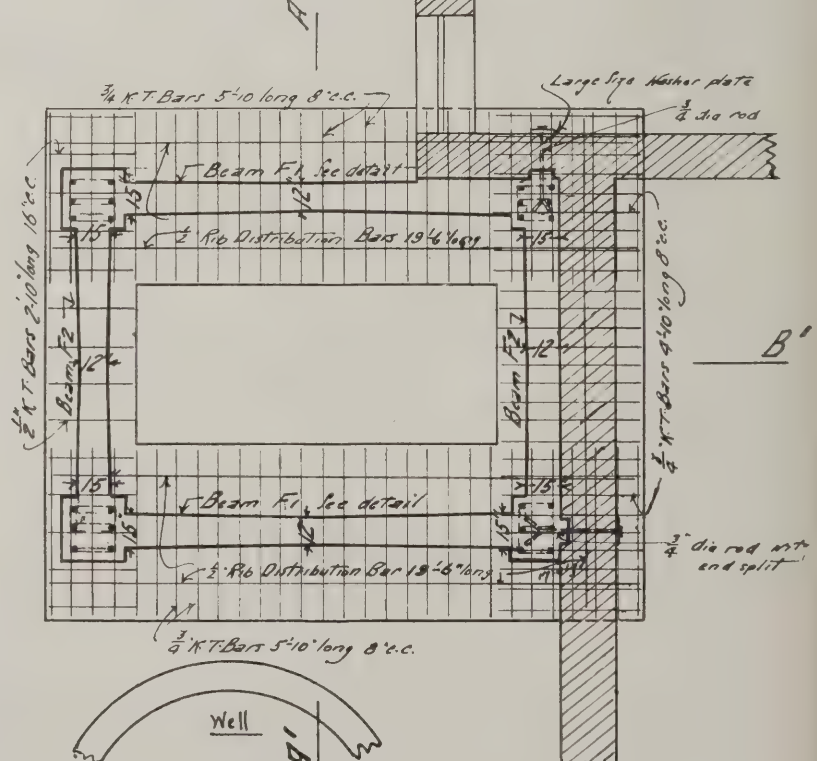








View of Tower in course of erection.


A'
3/4 K T Bars 5'-10 long 8" c.c.
Large Size Washer plate
3/4 dia rod
Beam F1 See detail
1/2 Rib Distribution Bars 19'-6" long
1/2" K T Bars 2'-10 long 18" c.c.
Beam F2
1/4 K T Bars 4'-10 long 8" c.c.
B'
Beam F1 See detail
1/2 Rib Distribution Bar 19'-6" long
3/4 dia rod with end split
3/4 K T Bars 5'-10 long 8" c.c.
Well
15
12
A'

Plan of Raft Construction.

REINFORCED CONCRETE WATER TOWER AT DUNDALK, IRELAND.

he proportions of 1 lime to 3 sand, the trength rose to the highest of any obtained n the series. "It would thus seem," ays Mr. Dibdin, "that, given good naterials, the essential point is to com- letely fill the voids, as it cannot be ssumed that the addition of such a small uantity of clay could itself raise the trength of the mortar over four and a alf times."

One of the tables is specially valuable s indicating what matrix or aggregate hould be preferred for use with either one r the other to secure the best results— nat is to say, that if a Dorking grey- tone lime is employed, pit sand in the atio of 1 to 2 will give the maximum rushing strength, equal to double that btained with Charlton fine sand, and lay should not be present; but if the me is blue lias, ground brick is prefer- ble in the ratio of 1 to 2, which gives early four times the strength available ith fine sand. If a given lime and sand re to be employed—say Dorking grey- tone lime and ordinary pit sand—the sual proportion of 1 to 3 is not so good s 1 to 2, which gives a crushing strength f half as much again, with only a very ttle lower tensile strength. Mr. Dibdin inks it unfortunate that the tests with lded clay were confined to proportions 1 to 3, as proportions of 1 to 2 would ave given very much better results.

"The ratios of tensile to crushing rength are distinctly variable, and do ot appear to convey any marked indica- on of value."

The tests for adhesion of bricks with arious mortars clearly demonstrated the periority of Fletton bricks over stock icks; and Thames sand and ground ick were distinctly the best aggregates.

Examination of ancient mortars (of hich twenty-nine samples were tested) vealed the absence of the soluble silica hich it had been assumed was formed in e course of time by the action of lime sand, and Mr. Dibdin believes that e mistaken assumption arose from the esence of pozzuolana. It was found that e presence of small quantities of clean rruginous clay in the aggregate had no leterious effect on the mortar, such mples being among the best. The ediæval mortars were in some instances tremely good; but 500-year-old mortar om the Norwich Guild Hall contained ke and coal, the proportions of lime aggregate being 3 to 1. The wall in nich it was used could be pulled down th the fingers. A sample from Painters' ll, which was built under the super- ion of Wren, contained 15.4 per cent. earthy matter in the aggregate, which s largely composed of broken red brick, ganic débris, carbon, etc., the propor- n of lime to aggregate being 1 to 0.53; t a crushing strength of 110 lb. per cu. was obtained.

With respect to pozzuolana, it is noted t experiments with that material and h trass—a volcanic calcined clay, much d on the Continent—were contem- ted, but that the work already in hand cluded the investigation. With respect trass, the investigation would have been newhat superfluous, seeing that an ex- stive series of tests had been under- en in Germany by Government en- eers; and the results of these tests, by courtesy of Mr. William Challoner, Blackpool, Mr. Dibdin has been en- led to add to his report. In Mr. alloner's contribution it is stated that ng to the natural conditions of low ter-bearing ground, the Dutch archi- s and builders have long realised the necessity for a careful selection of impervious building materials, and for the preparation of dense insoluble mortars. For that reason hard burnt bricks and trass lime mortars have been in common use in Holland for centuries. Most of the buildings in Haarlem, Rotterdam, Amsterdam, and the Hague, are evidence of the success which has attended this practice, as although nearly all the buildings have their foundations below normal water level, they show few signs of dampness or depreciation due to this cause. The volumes of lime and trass are varied proportionately to meet the necessity of the varying degrees of moisture to which the foundations must be subjected, and the proportion of the two former ingredients are reduced for the superstructure, where a less dense mortar will fulfil the required conditions of strength to maintain the stability of the building while at the same time effecting an economy in cost. In such circumstances, the "absolutely watertight mixture is 1 volume trass, 1 volume fat lime, 1 to 1½ sand. Under ordinary conditions, the proportions have been 1 trass, 2 fat lime putty, 5 sand; and 1 trass, 1 fat lime, and 3 to 4 sand. Of the latter formula it is stated that "the walls built with this mortar are exceedingly strong, and the admixture of trass in the mortar gave much better results than could have been obtained by the use of hydraulic lime or cement for the same purpose."

It will be inferred that this R.I.B.A. report is extremely valuable, and that it ought to be in the hands of all who are in any way responsible for the direction and pursuit of building operations. Unfortunately its price—five shillings—suggests a more restricted circulation than is desirable. Undoubtedly the book is well worth the money, and it is easy to understand that the expenses attending its production must have been somewhat heavy, and probably more than sufficient to justify the price set upon the book. Nevertheless, it might have been better, even as a purely commercial proposition, to make a much lower charge, and to depend upon the consequent multiplication of the demand for a due return on the outlay; for this is a report in which it may be presumed that thousands of builders are keenly interested. The book should have been provided with an index.

Gigantic Statue of King Edward.

Manchester memorial to King Edward will be a bronze statue 20 ft. high, mounted on a granite pedestal 30 ft. high. It will dominate Piccadilly. Mr. J. Cassidy is the sculptor for the work, which will occupy two years, and will cost £8,000.

Portinscale Bridge.

A meeting of ratepayers was held at Braithwaite last week to consider the question of the rebuilding of the picturesque old bridge at Portinscale, near Keswick, about which there has been some controversy. Mr. Frank Marshall, of Hawse End, who presided, advocated "conservative treatment" for the present structure, on the lines suggested by Sir Robert Hunter, i.e., by grouting. Local opinion is in favour of a new bridge. County councillors contend that the grouting process advocated by Sir Robert Hunter will not strengthen the old bridge sufficiently to meet the requirements of modern traffic.

THE ELECTRICAL EXHIBITION AT OLYMPIA.

SECOND NOTICE.

Pinchin, Johnson and Co., Ltd. Stands Nos. 155 *and* 156.

The exhibits of this company are not directly electrical, but find many indirect applications in the electrical field. They are divided into two classes, namely, insulating varnishes and compounds, and a range of decorative finishes and paints. The first class includes varnishes specially manufactured by the firm at their new works at Silvertown for dealing with all parts of electrical machines. Windings of dynamos are shown treated with the well-known "Standard" insulating varnishes and compounds, as well as specimens of cloth treated with different kinds of varnishes showing di-electric strength and durability tests. An interesting feature is a vacuum drying and impregnating apparatus, so designed that pressure can be subsequently applied to the objects varnished in order to ensure thorough penetration.

On the decorative side, the firm make an interesting display of "Satinette" enamel, "Minerva" paint, "Deydo" distemper, and "Syronite" anti-rust paint. For "Deydo" distemper, which can be supplied in 59 shades, it is claimed that a finish can be obtained with one coat.

Simplex Conduits, Ltd. Stands Nos. 148 *and* 163.

A visit to this exhibit will be well repaid. Not only is the stand of attractive design, but the exhibits combine art and utility to a degree which is not usually found amongst electrical engineering firms. Under a somewhat different name it was Simplex Conduits who originally introduced the system of steel conduits and fittings, designed by their managing director, Mr. L. M. Waterhouse, which have been so extensively adopted (and imitated). Nevertheless the company have studied the subject of conduit wiring more extensively than any of their imitators, and have standardised a system, complete in itself, the name of which stands for excellence. Some years ago they developed an electrical supplies business, so that, in addition to the exhibit of Simplex Conduits, they are now showing many other things. Amongst these, the most important is undoubtely the "Prometheus" electric heating and cooking apparatus. These differ from all others in that the heating element consists of a series of films of metal deposited on mica, easily replaced. Irons, kettles, and ovens of various sizes have been brought down to prices that are really low, consistent with good workmanship, and special mention should be made of the large double-oven cooking range with a capacity for supplying 40 persons. Mention must also be made of the display of shades, especially those known as "Spookie" and "Mosaic" silk, whilst a tasteful display of fittings will be found, with and without Holophane glassware. The company are also specialists in electric window signs, with regard to which we have already written in these pages.

Duncan Watson and Co.
Stands Nos. 60-63.

This firm can take credit to itself for being one of the few electrical contractors enterprising enough not to leave the present exhibition entirely to the manufacturers. Their chief exhibits are an electrical vacuum cleaner, a plant for supplying electricity to a small country house, and the "Vibrax" electric vibratory apparatus for massage. Of these, the first is no doubt the most popular apparatus of its kind on the market, as it is a really efficient and well-built machine, not a toy. Although apparently bulky in appearance, it is easily portable, silent in operation, and economical in consumption of current. It is claimed that by its use one maid can do the work of six, in half the time, at a cost of about ½d. per hour. One advantage of a commercial nature is that the price of the cleaner includes the full equipment of parts, which comprises, amongst other things, nozzles for renovating carpets and rugs; for portières, upholstery, etc.; for corners; for light and rapid sweeping; for hardwood floors. There are also a brush for walls, ceilings, and mouldings; another for books, hats, furs, etc.; a blowing hose for drying hair, airing bedding; as well as several necessary accessories. Visitors to Olympia should not fail to see this cleaner at work.

R. Waygood and Co., Ltd. Stands Nos. 75 *and* 97.

One of the special novelties which Messrs. Waygood show is the "Verysure" patent locking device for lift doors, which is fitted to the electric passenger lift on exhibit. The use of this apparatus precludes a door from being opened until the lift is opposite it, and the lift itself cannot be started unless the door is shut. The same apparatus can be supplied to hydraulic lifts without any alteration of the mechanism. Amongst other Waygood specialities is their automatic push-button lift, the features of which are well known, and their well-standardised service lifts. In the latter connection we are informed that whilst a passenger lift generally costs about £10 per annum to maintain, an electric service lift only costs a few shillings a year.

British Thomson-Houston Co., Ltd. Stands Nos. 124 *and* 135.

The exhibit of this company consists of a number of electrical appliances manufactured at their Rugby works. The chief and most comprehensive exhibit comprises their "Mazda" lamps. A complete range of these lamps from 6 to 600 watts is shown, covering the entire field of interior and exterior lighting. Of special interest is the exhibit of the new "Mazda" drawn-wire lamp, the filament of which is claimed to possess exceptional strength and durability. In addition to standard lamps, there are shown lamps for railway trains, tramcars, steamships, motor cars, electric signs and radiators, and there is also a complete line of B.T.H. Edison and Gem lamps. Holophane glass and Mazdalux metal reflectors are also shown, most satisfactory lighting results being secured with these in conjunction with "Mazda" lamps. The flashing sign at the exit of the exhibition is 32 ft. long and 3 ft. 6in. high. It is composed of nearly 3,000 "Mazda" lamps, and by means of a "flasher" at 10 second intervals no fewer than seven different changes of wording are shown.

Motors, instruments, heating and cooking devices, rheostats, regulators, etc., are shown inoperative, and automatic contactor switches operative. The motors exhibited include small sewing-machine motors, two-phase and three-phase stationary motors, and continuous-current motors. The heating and cooking devices consist of the "Calorite" flat irons, kettles, and hot-water jugs, glue pots, tea and coffee percolators, and non-luminous radiators. There are also shown a "Tirrill" regulator, for regulating the voltage generated within one per cent.; current potential and static transformers; intensified arc lamps; lightning arresters; and other devices, making altogether a most comprehensive exhibit of electrical apparatus.

Western Electric Co., Ltd. Stands Nos. 51 *and* 72.

This company are exhibiting telephones and switchboards for large telephone exchange equipments for central battery and also magneto-ringing systems. They are the pioneers in the introduction and development of the central battery telephone system, which has now been almost universally adopted for public exchanges. Telephones for private systems in hotels, municipal buildings, asylums, etc., are shown in operation; also telephones for traction work, mines and military purposes, and telephone switchboards for all purposes. The exhibit further includes specimens of cable of all types manufactured by the company, whilst a special display is made of the improved "Blue Bell" dry cell, which is claimed to be one of the very best batteries for telephone and bell work, possessing qualities not found in most dry cells, at moderate cost. The exhibit also includes special electrical supplies, including metal filament lamps, "Amazon" insulating tape, new fibre conduit, expansion bolts and line material, fuses, and new weld-clad copper wire of unique strength.

Amongst other telephone exhibits, the following two are of special interest for office and domestic use respectively: Type No. 1,020, being a switchboard possessing many unique features (amongst others a new combined signal and jack), and Type No. 400,028, comprising all-metal interphones up to 12 lines capacity. The cases of the latter are made of japanned metal stamping, giving strength and a pleasing appearance. No. 40,028 is intended especially for installation during the erection or re-decoration of a building. The back half of the set contains nothing more than a terminal strip, and is sunk flush in the wall. The connecting cable is also sunk in the wall and wired to the strip. The front portion, with all apparatus, is simply screwed to the back when the building is complete. The case projects only 1 in. from the wall when installed, and makes an extremely neat and efficient job.

Escaré and Denelle, Ltd. Stand Nos. 145 *and* 166.

The exhibit of this well-known firm of fittings makers differs from other similar displays in two respects, namely, that men are at work on the stand actually chasing castings and showing the method of embellishing metals, and also that the firm claim to be the only makers of French gilt fittings in this country. Generally, the exhibit includes a good selection of high-class French and English fittings and door furniture, which should be seen by all those interested in the metal worker's art. There are, however, some special fittings of more than usual interest, such as a reproduction of an electrolier made for the King's dressing-room at Buckingham Palace and the drawing-room at Holyrood; also of electrolier and wall lights from Knole Park, lantern from Cluny, and wall lights from the Louvre and Versailles.

W. T. Henley's Telegraph Works Co., Ltd Stand Nos. 178 *and* 185.

Apart from the generous exhibit of insulated wires and cables, jointing material and accessories of all kinds shown by this important company, their new wiring system forms the most interesting display on their stand, and receives a great deal of attention. It has been introduced, so we are informed, to overcome the alleged objection and faults of other wiring systems claimed to be inexpensive. In the Henley wiring system, the insulated conductors are wrapped round with a spiral composed of copper tape, and the whole is then sheathed with a solid drawn seamless tube of metal. The latter has the appearance of lead, but it is stated to be an alloy. Naturally the Henley wires are very flexible, and the accessories used for their erection appear to be extremely simple, so that the cost of wiring should not be high. The copper tape is employed as a return conductor where concentric wiring is allowed, and indeed, the particular wires described are intended for concentric work only; for two-wire work the wires are made up twin and sheathed without the copper tape.

The British Vacuum Cleaner Co., Ltd Stands Nos. 174 *and* 189.

Since the above company introduced the vacuum cleaner about ten years ago this system of cleaning has advanced rapidly in popularity, and many improvements have been made in details. Amongst others, electrical cleaners o many kinds have been placed on the market, but practically all of these are based on the present company's patents and their makers pay royalty on this account. That the B.V.C. Co. should have a good display, and a practical one, a Olympia, could be considered a foregone conclusion, and this has been justified by the result. Nobody who is interested in the subject should fail to visit the stand, and see the many forms of cleaning plants in the working.

The Linolite Co. Stand No. 143.

Those who are interested in electric shop-window lighting, and indirect lighting of rooms by lamps concealed behind the cornices, should visit this stand and see the "Tubolite" system with metal filament lamps. The system comprises a series of tubular lamps backed by highly polished aluminium reflectors. The lamp are now made for 25 and 100 to 125 volts two or more being run in series for highe pressures. Apart from the purpose describe, "Tubolite" may be employed fo other purposes, such as table, desk and orchestral lamps, the lighting of show cases, etc., and, in fact, wherever concealed lamps and good reflected lighting are required.

The Armorduct Manufacturing Co., Ltd. Stands Nos. 120, 121, 138, *and* 139.

This company has a large stand and seven specialities. Originally occupied only with the sale of a special weldless steel conduit system for electric wiring their business now includes the sale o wires and cables, "Geal" metal filamen lamps, "Therma" heating and cooking appliances, "Little Hustler" electrically operated tools, the "Magic" suction cleaner and accessories. All of these have certain points of interest, and the cleaner especially, is of particularly neat and efficient design.

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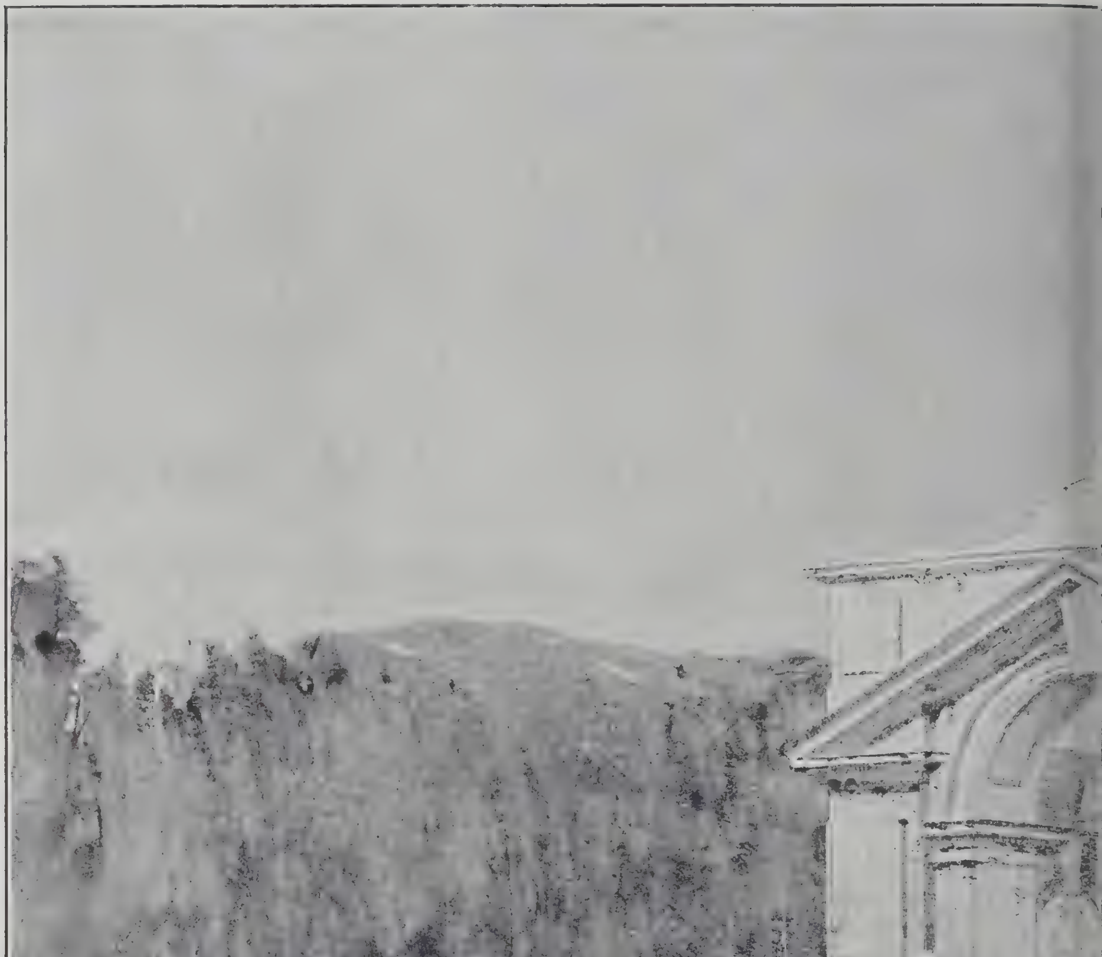

THE RAND REGIMENTS' MEMORIAL, ECKSTEIN

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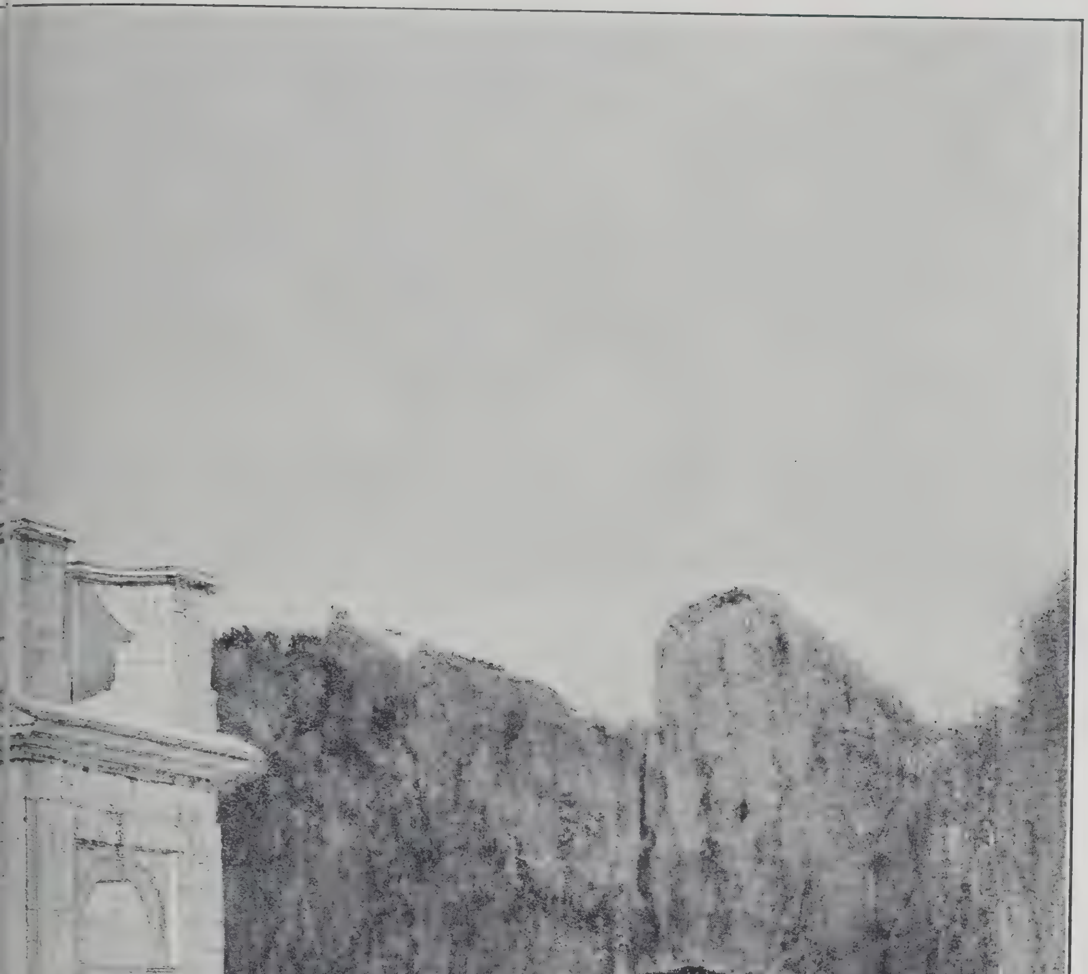

EDWIN L. LUTYENS. F.R.I.B.A., ARCHITECT.

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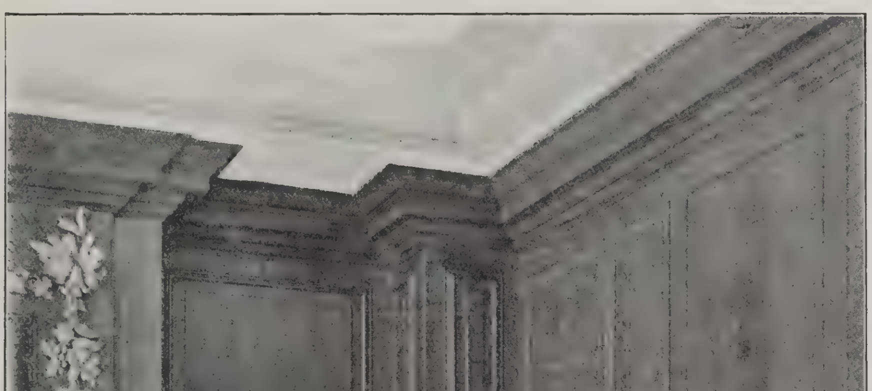
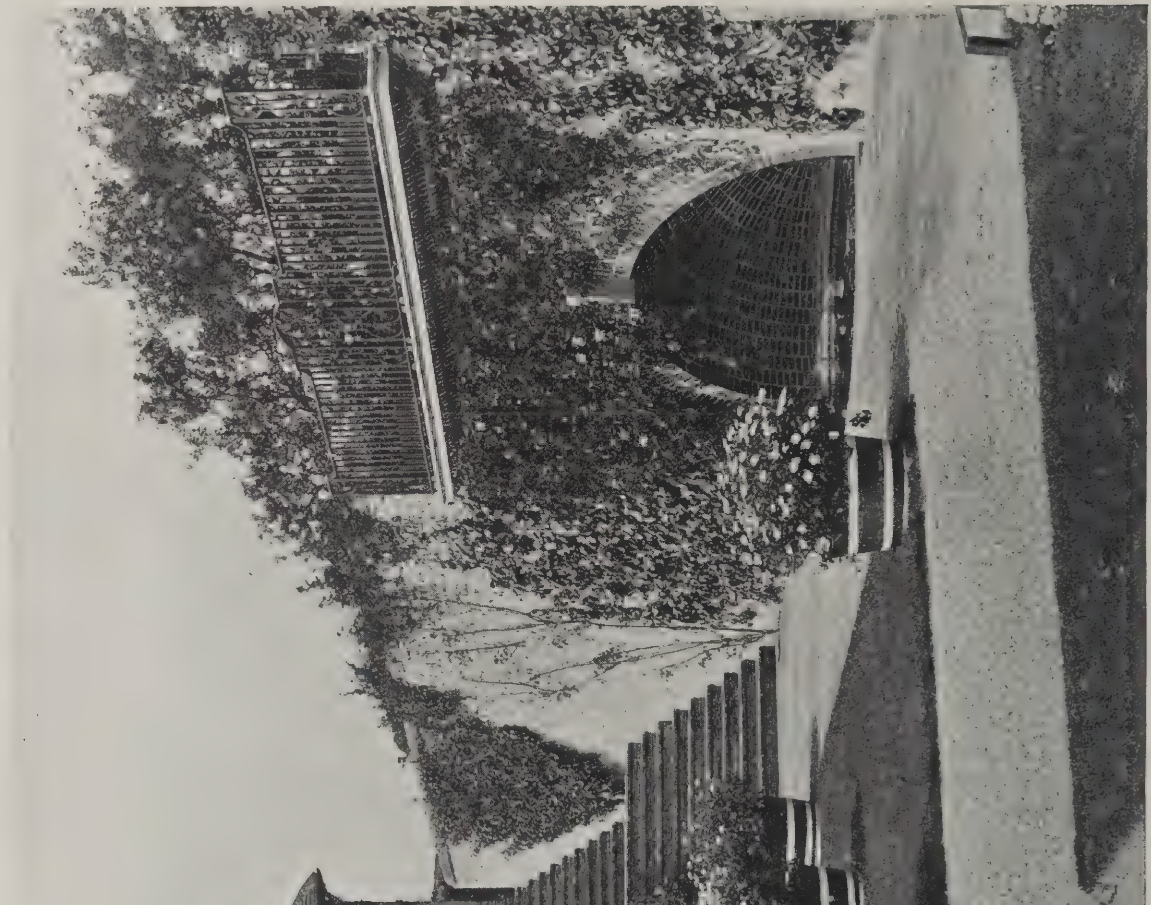


PANELLING IN BOARD-ROOM, N.E.R. OFFICES, COWLEY STREET, WESTMINSTER. HORACE FIELD AND SIMMONS, ARCHITECTS.

(See page 414.)



TERRACE AND GARDEN HOUSE, "THE HOO," WILLINGDON, NEAR EASTBOURNE. EDWIN L. LUTYENS, F.R.I.B.A., ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

OCTOBER 18th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 873.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

Some Correspondence on Copyright.

THE October issue of the *Architectural Association Journal* (a very interesting number, on which we may congratulate the Association) contains three important letters on the subject of architecture and the Copyright Act; one signed "Architect" reprinted from the *Athenæum*, the other two respectively by the present and the last presidents of the Association, Mr. Horsley and Mr. Keen. All three "charge" (as they say of a judge in court) against the Act and against the whole idea of the establishment of a legal copyright in architectural design. It seems a pity, after much argument and evidence had ed up to the acceptance of the Act (rather contrary to expecation) by a large majority in the House of Commons, that architects should be weakening the position by complaining of an Act passed in their own interests and constituting he first formal recognition by Government of the value of architectural design; but it may be worth while to consider what are the reasons of these opponents, and what weight there s in them, especially as the Editor of the Association Journal has invited further correspondence on the subject.

"Architect" thinks that the impending change "contains he germ of distracting, if not destructive elements, which may seriously affect the natural and happy development of architecture." What reasons does he give for these alarming prognostications? If architecture is only a business, he says, no doubt much is to be said for an Act which will put a stop o the petty pilfering of other men's ideas; but if architecture s a fine art, this is to be deplored; and he reproduces the argument that we have seen advanced before, that "had there been a law of protective copyright, we should not possess the heritage of classical, of mediæval, of Renaissance days."

That sounds plausible, perhaps, on its first proposition; but s it really true? Both Greek and Gothic architecture had certain accepted details and accepted forms of plan, but are he buildings copies of one another to any extent which the Copyright Act would have prevented? Is there any copy, for nstance, of the Propylæa at Athens? Certainly not, as far as we know; it stands quite alone. Is there any other Greek emple which is a copy of the Parthenon? We know of none; and we are strongly under the impression that if exact copies of the Parthenon and the Propylæa had been erected in some other Greek city, there would have been a drastic complaint on he part both of the Athenian "local authorities" and their eminent architects. And as to Gothic, there are not two cathedrals in England alike. A Copyright Act would have stopped he erection of a second Peterborough front, no doubt, but would that have been a disadvantage or a crippling of mediæval architecture? No one, we think, would say so.

"Architect" goes on to say that "the English school of modern architects, famous all over the world for domestic architecture, study each other's latest work with zeal and honesty, accepting each advance with delight, working on each other's successes, and handing them back to their authors to be improved again." That would be a good description of the general conditions of the practice of mediæval architecture, where you find mouldings, for instance, and the structure and design of vaulting, progressing step by step by stages of improvement, or what each generation thought (not always rightly) to be improvements; but as a description of the conditions of modern practice it seems to us to lack verisimilitude; we do not see the evidence of it. Every good modern architect tries to improve on his own work, undoubtedly; we should rather doubt whether he makes it any special object to improve on his neighbour's work. But if he did, would the Copyright Act prevent him? The Copyright Act is directed against gross and obvious reproducing of another man's building, or of another man's design on paper. It is not often done, but there has been plenty of evidence brought forward that it has been done and may be done again, and it is a form of transgression which certainly ought to be stopped, on every ground, both of art and honesty.

Mr. Horsley, we observe, supports the idea that architects should be allowed to "work on each other's successes," but we do not think the Copyright Act would be read by any reasonable man, either architect or lawyer, into an engine for preventing that, if that is supposed to be the condition of progress in modern architecture. As observed just now, we doubt whether that is really the present position; but if it were, the Copyright Act would not affect it. To take an idea from another man and improve upon it is not copying. Then, to return to "Architect" again, he concludes his letter by a quotation from Walter Pater: "Something of the blossoming of the aloe is indeed an element in all true works of art . . . . . and this strangeness must be sweet too—a lovely strangeness"; and he remarks indignantly—"Thus wrote Walter Pater of qualities, the source of which it is now proposed to submit to the judgment of a court of law and a jury of laymen." That we should call simply claptrap. No one ever proposed that a court of law should attempt to take cognisance of such vague feelings, so vaguely indicated in Pater's poetic but rather fanciful language. It is to take cognisance of gross and prosaic copying, which can be easily recognised and defined.

It must be remembered also that those who draw a parallel between mediæval architecture and the architecture of the present day, and argue that a Copyright Act would have prevented the development of mediæval architecture as we now have it in its great monuments, even if they were right as to that (as we have endeavoured to show that they are not), seem to forget that, since the Renaissance, architecture is in an entirely different position from that which prevailed in the Middle Ages. Whether the fact be regarded as good or bad for architecture, the fact remains that architecture is now an individual art, as much as sculpture or painting. Even in the Middle Ages we believe that it was really much more so than is generally supposed, otherwise there could never have been the great and decisive individuality that there is in the designs of our cathedrals. But as to the present day there can be no question; a building nowadays is the idea and the design of a personal artist, whose name is attached to the work, and who has the credit of it. It is therefore perfectly reasonable and logical that his idea should be protected, just as the idea of a painter and a sculptor is protected. The principle has been accepted and acted upon in other countries, and is as applicable here as in France. And it must be remembered also that the Copyright Act affords for the first time the legal means for combating the gross injustice which architects have long suffered from in this country, of having their drawings impounded by a litigious client as his own property.

It seems a great pity that, after a great deal of trouble has been taken by architects, acting for the profession generally, to get this legal recognition of an architect's property in his ideas, and it has been accepted by the Legislature, other architects should start a movement for condemning and nullifying it. By doing so they are justifying the idea which has only too much hold on the popular mind, that architects are people who never know what they want, and are never satisfied. We have passed a law, they will say, after much discussion and after taking the evidence of members of your own body on the subject, to protect you from an injustice; and the first thing you do is to complain of it.

University College Lectures.

ON Thursday evening Mr. E. S. Prior began a course of lectures on English Gothic, to be continued weekly, in one of the lecture theatres at University College. As might have been expected, Mr. Prior took a special and very individual view of his subject, entirely different from the usual conventions of lecturers on the history of architecture. He pointed out that what was sometimes called the quality of "style" in a work of art was quite a different thing from what was meant by "a style" of Gothic architecture. We should hope that he did not mean to imply (though we are not quite sure!) that the general quality called "style" was a matter of no consequence; but his main point was that a style of architecture was the expression of a special form of construction; that it arises out of construction and not out of any aesthetic intention to make a style. This is very near the truth, and it is more near the truth in connection with Gothic architecture than with any other of the recognised styles. It is well that an audience composed mainly of students should have this aspect of Gothic thoroughly brought home to them; it is going far to make them understand what Gothic architecture really means. But Mr. Prior's weakness is that, in promulgating this eminently practical and logical view of Gothic architecture, he is inclined to push things too far, and to deny any influence from what may be called artistic taste. It is quite true that the complete Gothic developed out of Romanesque in the course of a struggle with constructional problems. But that does not account, for instance, for the change in the character of carved ornament between the Early English and the Decorated period, which is entirely a matter of taste; it does not account for the elaboration of vaulting patterns by the introduction of supernumerary ribs—lierne ribs, which do no real work, and are in fact bad construction, such as the French builders for the most part avoided; they are the results, not of structural conditions, but of a decadent taste. It is certainly pushing a statement too far, also, to tell his audience that the problem of Romanesque and Gothic architecture was simply to construct a large church and roof it in a fire-proof manner. Nothing, we should think, would make any reasonable person believe that the architects (we beg Mr. Prior's pardon for using the word) of the west front of Ely, of the west front of Peterborough, of the grand arch in the west front of Tewkesbury, did not know that they were doing a fine thing, did not mean to do a fine thing, were not thinking of something far beyond mere building. It is palpably absurd to suppose otherwise. Mr. Prior and some other writers on Gothic, because its structural origin has been somewhat overlooked—is habitually overlooked by amateurs—want to go to the other extreme and make out that the builders of the cathedrals had no artistic sense at all, and were merely anxious to build soundly. There is so much of real value in Mr. Prior's teaching on the subject that it is a pity it should be somewhat weakened by any exaggeration. His two "charts" distributed to the audience, giving in a schedule form a synopsis of the characteristics of English Gothic at different dates, and of the influences at work upon it, are admirable, and are the summing-up of a great deal of thought.

How Many Houses to the Acre?

ADDRESSING members of the King's Heath Labour Church, last week, on the subject of town-planning, Mr. J. S. Nettlefold remarked with regard to the controversy as to how many houses should be allowed to the acre, it was said in some cases this must be at least twenty or thirty, or rent would rise. He did not agree with that. With regard to the cost of estate development, he said that under the old method it cost the speculative builder about £400 an acre to put in his drains, sewers, and so forth. In town-planning, as practised on a little estate not far from there, it cost just over £200 an acre. That estate was only pioneer work, and was started before there was a Housing and Town-Planning Act. Like all pioneer work it has suffered from disadvantages. With the help of the Harborne, Quinton and other town-planning schemes going on all round Birmingham, he was confident that a future estate development would not cost more than £175 an acre, and it might be less. Ten houses to the acre would let at 4s. to 4s. 6d., giving an equity for the builder of 8½ per cent. He did not think that quite enough, but he would have plenty of margin if he were to increase that rent to 4s. 6d. and 5s. There was, he declared, more than one speculative builder in Birmingham to-day who would like to make a start at this new method.

Standard Measurements.

WHOSOEVER said that "science is measurement" was perhaps more sententious than scientific, but he certainly got somewhere near the heart of things, as did Pheidon of Ayos when, in 895 B.C., he invented weights and measures. And it is clearly essential to mere honesty as well as to scientific accuracy that such expressions as an inch, a foot, or a yard, a link or a "rod, pole, or perch," a quart, a bushel, a strike, an ounce, a pound, a gallon, a kilderkin, a minute, an hour, and so forth, should each have its definite determinable value. To this end in 1824 an Act was passed rendering uniformity compulsory from January 1st, 1826. Since then the Imperial Statute System of Weights and Measures has been in general use, although some few remnants of older forms still linger. For instance, there are the Lancashire, Irish, Cheshire, Cunningham, and Scottish acres; and are not eleven Irish miles equal to fourteen statute miles? And in Scotland do not two mutchkins equal one choppin? And there are weird survivals at Winchester of the time when in the tenth century that ancient city kept the standard. The inspector of weights and measures carries with him the means of testing whether or not the tradesman's scales, weights, and measures correspond to a definite standard; but how shall the architect and surveyor know of a certainty whether or not their rules and tapes and chains have not, in the rough usage of the workaday world, lost the virtue of representing strict truth? At Westminster and at Greenwich, and in some few other favoured spots, the means of verification are provided; although the standard yard on the Observatory Hill is so much exposed to the weather, is touched by so many thousands of inquisitive thumbs and forefingers, that its departure from the strictest verity would not be a matter of surprise—especially not to an architect, who, noting its fixture in a wall, will remember that walls expand in the genial sunshine, shrink from the rigors of winter, and that some of them have been known, in the course of time, to creep inches away from where they vere popularly supposed to be rigidly and permanently fixed. ndeed, an actual and material rigid standard is as difficult a hing to maintain as is a rigid moral standard; and we thereore read without much enthusiasm a newspaper report to the ffect that in William Brown Street, Liverpool, on the open pace where the Steble Fountain is situated, a foundation of ranite blocks has been let into the ground, and on these is be set up "a system of measures for the convenience of rchitects and surveyors, who will be able to verify their own teel or linen tape, or link measures." Provided due precauons are taken to protect the apparatus from the effects of the eather, and against wilful damage which might render it orse than useless, the installation may serve to determine an casional doubt or dispute, and we hope that the Liverpool irveyors are duly grateful for it. But if this sort of thing worth doing at all, it should surely be done on some andardised and general system, so that each town hall, for istance, should be provided with standard gauges supplied id guaranteed by a properly constituted central authority, ho should be charged with the duty of periodically inspecting iem.

The Preservation of Canterbury Cathedral.

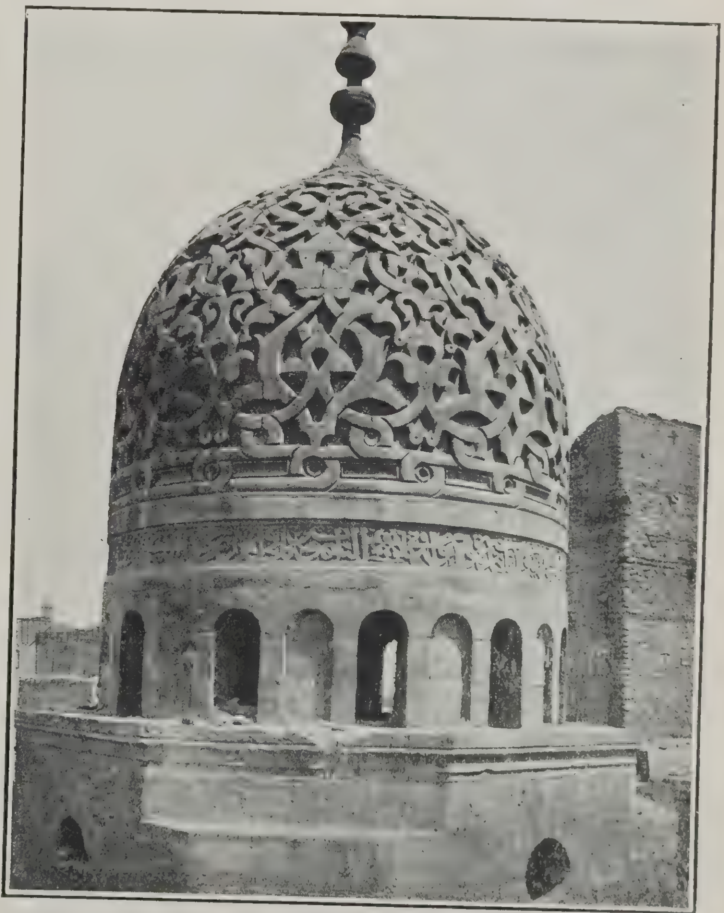
DEAN WACE, of Canterbury, in making an earnest appeal for funds for the furtherance of the works of preservation at the cathedral, gives a brief account of hat has been done and more particularly of what remains to . In restoring to a condition of security and soundness two it of the three towers of the Cathedral—the central, or Bell arry, or Angel, tower, and the north-western tower—the chitect, Mr. Caröe, has, says the Dean, conducted this work urgent reparation in a manner that commands general proval. But there remains the third, the south-western wer, commenced by Archbishop Chicheley in the reign of ing Henry V., which, though less decayed than the other o, is also in grievous need of reparation. The pinnacles re in a dangerous state, and the greater part of them has d to be taken down, leaving the summit of the tower with sadly truncated appearance. The requisite scaffolding to top of this tower has been erected so as to enable the hitect to make a complete survey of its condition; but uns the public now come to the rescue, there will be no money r carrying out the works which he deems indispensable. His imate for this tower amounts to about £5,500. When this lone there will remain the necessity of repairing the pinnacles the nave, which are in such grievous decay that some of m have had to be taken down for safety. The latter work, wever, may be deferred, and done gradually. But it is natter of great urgency to proceed with the repair of the icheley Tower. When that is accomplished, the chief ernal features of the Cathedral will be permanently restored.

A Cairo Cupola.

HE accompanying illustration (for which we are indebted to Mr. Frederick Chatterton, A.R.I.B.A., of Cairo) shows one of the smaller domes of what may ealled the Saracenic pattern at Cairo, in the style ch is familiar in such well-known buildings as mosque of Kait-Bey. Here we have again, on a smaller e, the dome pointed at the apex and covered with the interd ornament in relief which seems to be the natural exterior sh of an Arab dome. Round the drum is what is probably xt of the Koran worked into ornamental lettering, by way frieze, and below this the row of small round-headed wins, which are also a common feature in this position. It is rather odd that in buildings with a pointed dome, and hich probably all the other arches are pointed, the round should be retained, as it frequently is, in the drum of the e, as if there were some special suitability for it here. t probably it is a matter of precedent and survival, but it is er a curious incident in Arab architecture.

"The Vyne," Near Basingstoke.

AT this distance of time, and for lack of the necessary documentary evidence, it is often a problem to determine who was the architect of some notable building of the sixteenth or seventeenth century. A case in point is afforded by that beautiful brick house "The Vyne," near Basingstoke, with which Mr. J. Alfred Gotch deals in an article, finely illustrated, in the October issue of the *Architectural Review*. The Classic portico on the garden front and the doorways on the entrance front have both been attributed to Inigo Jones, but the evidence which, in this case, is luckily to hand, points more certainly to his nephew and assistant John Webb as the designer. It must be remembered that the property had by this time changed hands. From its original owners the Sandys it had passed to Chaloner Chute, an eminent Parliamentarian who became Speaker of the House of Commons under Richard Cromwell. It is inherently improbable, says Mr. Gotch, that he would have employed Inigo Jones, who was an ardent Royalist, and actually resident in Basing House near by when it was taken by the Parliamentary forces. But the original design of the porch is preserved in the Devonshire collection at the library of the Royal Institute of British Architects, as well as two smaller designs, one for an interior doorway and another for a "tabernacle," both of which were intended for "The Vyne." These drawings are clearly not by Inigo Jones, but they may very well be the work of Webb—the portico in particular. The proportions of this feature, now somewhat obscured by creepers, are rather attenuated, but the detail is refined. The whole structure, however, is out of place, and harmonises ill both with the battlemented parapets of the first house and the plain ones of its Jacobean enlargement. The doors on the entrance front blend more happily with their surroundings, and still preserve something of that wayward fancy which marks the work of the early seventeenth century. Webb, at his best, had quite a dainty imagination, as may be seen in some of the panelling at



A CAIRO CUPOLA.

Thorpe Hall, and in some of his designs in the Devonshire collection.

Another interesting article in the October issue of the *Review* is one by Mr. Walter H. Godfrey concerning Abbot's Hospital, Guildford, in particular, though, for the most part, it is an admirable epitome of the growth of the almshouse—a subject never yet thoroughly dealt with.

The "Current Architecture" section includes the Royal Liver Building, Liverpool, by Mr. W. Aubrey Thomas, a Fifeshire church by Mr. Reginald Fairlie, some South African buildings by Messrs. Baker and Masey, and a memorial tablet to King Edward by Professor Lethaby; while among features are illustrated articles on Mansart's Chapel at Versailles, the Aitre S. Maclou, Rouen, the Tattershall Castle fireplaces, Trerice Manor, and some drawings of Oxford Colleges (by Mr. E. H. New) and of Glasgow (by Mr. Muirhead Bone).

Bardney Abbey Excavations.

THE Rev. Charles E. Laing, Vicar of Bardney, writes to state that the excavations which have been going on at Bardney Abbey for the past two years and a half have produced remarkable results. "We have," he says, "just finished the whole area of the church, which is 260 ft. long, 61 ft. broad, and 130 ft. across the transepts; the excavating has disclosed considerable remains of thirty pillars, two altar slabs, and eighty monumental slabs of unusual interest *in situ*, fifty-four of which have inscriptions dating from Abbot Roger de Barowe, 1352, to William Sotheray, Sub-Prior, 1525. The refectory contains not only the stumps of the table legs, but also the triangular-shaped trestles (with carved heads) that carried the tables; the dorter, reredorter, chapter house, kitchen, and well are full of interest." A "well full of interest" should be a strong persuasive to the public, to whom an appeal is being made for funds to enable the further prosecution of the work, and we trust that it may turn out to be a "draw-well." Bardney is nine miles from Lincoln, and the abbey is a mile and a half from Bardney Station.

Winchester Cathedral.

THE diver employed at Winchester Cathedral has finished his work, and quitted the scene of his labours beneath the Cathedral foundations, and the last drift excavated by him is now in the hands of the bricklayers. The new flying buttresses on the south side are more than half built, and it is hoped that the whole of the work will be completed in the spring of next year, the cost being something like £112,000. The reparation works have extended over a period of six years, and notwithstanding the risk attached to many branches of the work, not a single accident has occurred. The fund is showing good progress. In response to the final appeal for £10,500, a total of £3,822 has been subscribed. The very interesting operations at the Cathedral were described by the Architect, Mr. T. G. Jackson, R.A., in a paper which he read before the St. Paul's Ecclesiological Society last year, and was printed as Vol. VI. of the Transactions of that society. From this paper we were courteously permitted to extract such particulars as appeared to be of particular practical value, and these, with illustrations of the shoring, were given in our issue of November 16th, 1910. As we stated in an earlier note, it was found that the eleventh-century builders had laid the foundations on a peat-marsh, under which was a subterranean lake with a gravel bed. They had here and there inserted oak piles as supports, but, generally speaking, had been content with heaping flints on the peat. De Lucy, who at the beginning of the thirteenth century added the east end, laid his foundations on beech trunks placed on the peat marsh. Small wonder that, in the course of 700 years, the building had sunk 15 ins., and that the cathedral was seemingly within an ace of utter destruction. The diver, having cleared away the waterlogged flints, the peat, and the beech trunks, laid bags of cement on the cleared gravel bed, and in this way new and solid foundations were built up. Thus there has been added a new chapter to the romance of restoration.

The Parnell Monument.

THE monument to Parnell in Dublin, recently unveiled by Mr. John Redmond, occupies a site at the junction of Great Britain Street and Sackville Street. It comprises a marble obelisk of triangular form, 57 ft. high, surmounted by a bronze tripod 8 ft. high. The bronze statue of Parnell, 8 ft. high, is by the late American sculptor, Mr. St. Gaudens. It stands at the base of the monument facing down Sackville Street, and shows the great Nationalist leader in an oratorical attitude with the left arm outstretched. Above the figure on the monument is a golden harp, with the following, now well-known, extract from a speech of Parnell: "No man has a right to fix the boundary to the march of a nation. No man has a right to say to his country, Thus far shalt thou go and no further. We have never attempted to fix the *ne plus ultra* in the progress of Ireland's nationhood, and we never shall."

It is interesting to recall that the statue was St. Gaudens second attempt, the first when almost completed having beer destroyed in a fire which consumed the artist's studio. It likeness to Parnell is disputed by many of his old followers but it admittedly has many fine artistic qualities.

The Rebus in Decoration.

IN introducing the subject of Warden Huntingdon's rebu in Manchester Cathedral, Mr. Henry A. Hudson (in th "Manchester Guardian") recalls that fifteenth centur buildings abound in such fanciful conceits, and on many a out-of-the-way part of the buildings of this age, on walls an battlements outside, and specially on the roofs and stallwor inside these churches, we come across delightfully naïve bit of humorous carving which afford quite a wealth of insigh into the mind and manners of bygone days. Of such carving the rebus is by no means the least interesting. The rebus, M Hudson says, was rather overdone in late work—Bishop Ol ham's chantry, indeed, is a veritable aviary of owls—whils another well-known example, Abbot Islip's chantry at Wes minster, runs riot with eyes and lips and slip-knots and capita I's in the form of a tree, upon which a climber is represente as slipping. But there is a choice and much earlier examp in Manchester Cathedral—the rebus of the first warden the Collegiate Church, John Huntingdon, to whom is due th erection of the first choir of the College. The name is repr sented by means of two scenes, in one of which a man appea hunting, whilst in the second the same man is refreshing hin self at the wine tun, the chase being done. This rebus, should be remarked, is not the one which is commonly pointe out to visitors, and often referred to by recent writers as bein carved in stone on the wall of the arch above the entrance the Lady Chapel, but another carved in timber in the spandre of the struts supporting the roof beam immediately over th great choir arch on its eastern side. The sculptures on the ea wall are a copy, altogether poor and spiritless in compariso with the originals beneath the roof beam. John Huntingdo first Warden of the collegiate church of St. Mary the Virgi Manchester, assumed that office in 1422, but the present buil ing, which was elevated to cathedral rank in 1848, w probably reconstructed in the early half of the fifteenth ce tury, after Huntingdon became Warden; and it has sin been extensively restored. The fine tower, indeed, which 140 ft. high, was finished in 1867, and was designed by th late Mr. J. S. Crowther. A freakish rebus representin a distortion that is more than verbal is that of the twist brazen nose of Brasenose College, Oxford; Brasing House, brewery being perhaps thus brazenly misrepresented.

DWIN LANDSEER LUTYENS, F.R.I.B.A.: AN APPRECIATION.

BY A. U.

L. LUTYENS has always been a hero to me. When I was a young apprentice in a joiner's shop he was a youngster designing his first house, almost too young elieve he was 19) to be allowed to chaffer with the builder whose employment I was. Now he has reached the top the tree, with the Edward VII. Memorial in hand, the highest honours and dignities apparently not far off. is, moreover, one of those Fellows of the R.I.B.A. who to be admitted because they could not be allowed to stay side.

Vhat is the secret of it all? How is it that this young (he can't be much more than 40) has risen so high in a fession in which competition is very very keen, and in ch proficiency is pretty considerable?

t is because he realised from the first that architecture is art, and kept that point steadily in view, never veering n it, either, as some men have, for greater gain, or from entreaties of importunate clients.

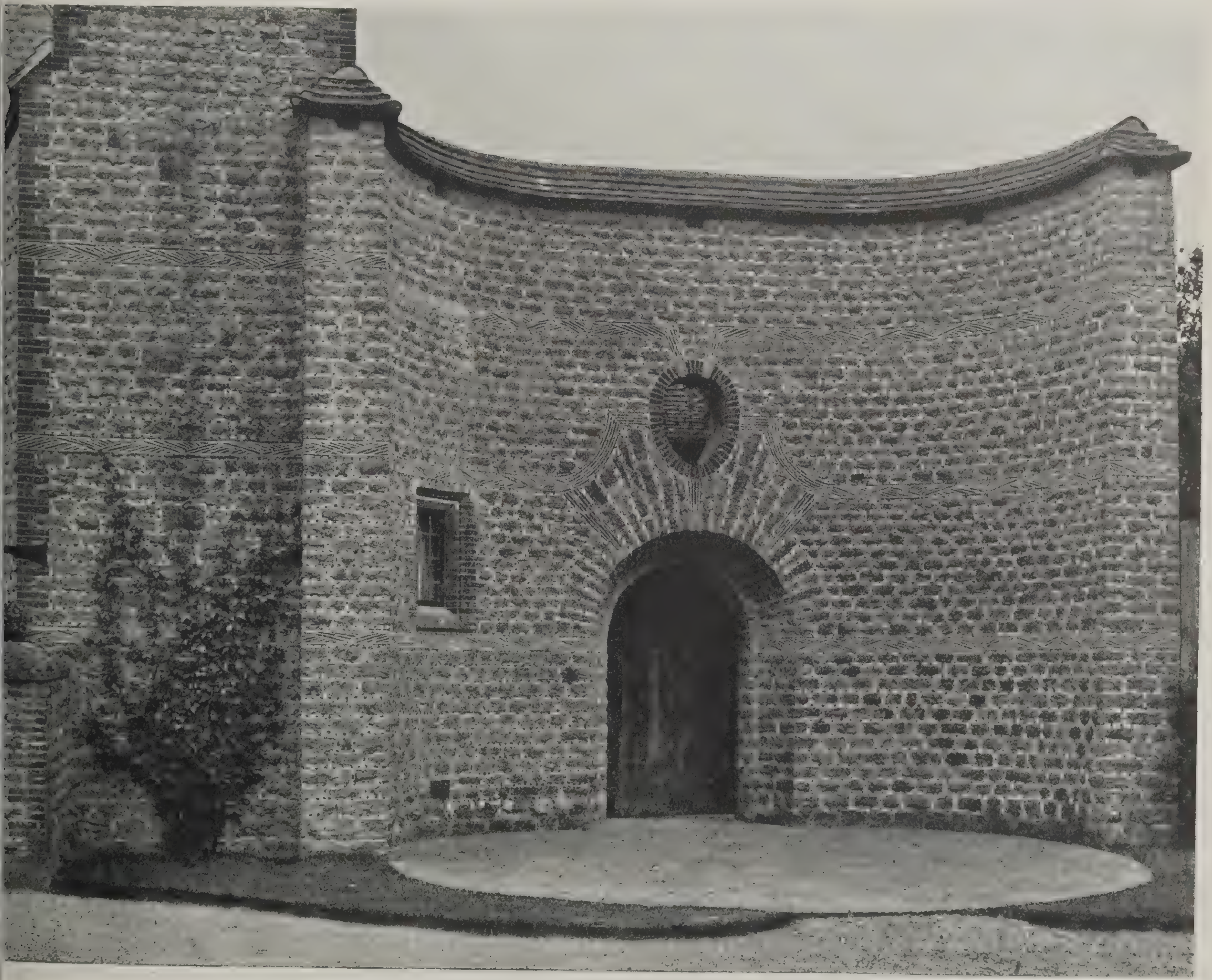
Iis father was a painter. He was brought up, if born, in Thursley, the most picturesque village the most beautiful part of Surrey. He had the inary education of an artist, and spent some time at R.S.A., South Kensington. He was with Mr. (now Ernest George, but I believe stayed with him hardly more than a year. He started to build at once, and his knowledge has been acquired and perfected in building, his first work being some cottages at Shere. They are very picturesque, and the detail is ingenious and refined, but not much better or worse than might be expected of an average pupil of Ernest George.

He had from the first the idea which is partly expressed by the Art Workers' Guild motto, "to use material aright," and it is interesting to watch the idea develop as the style matures.

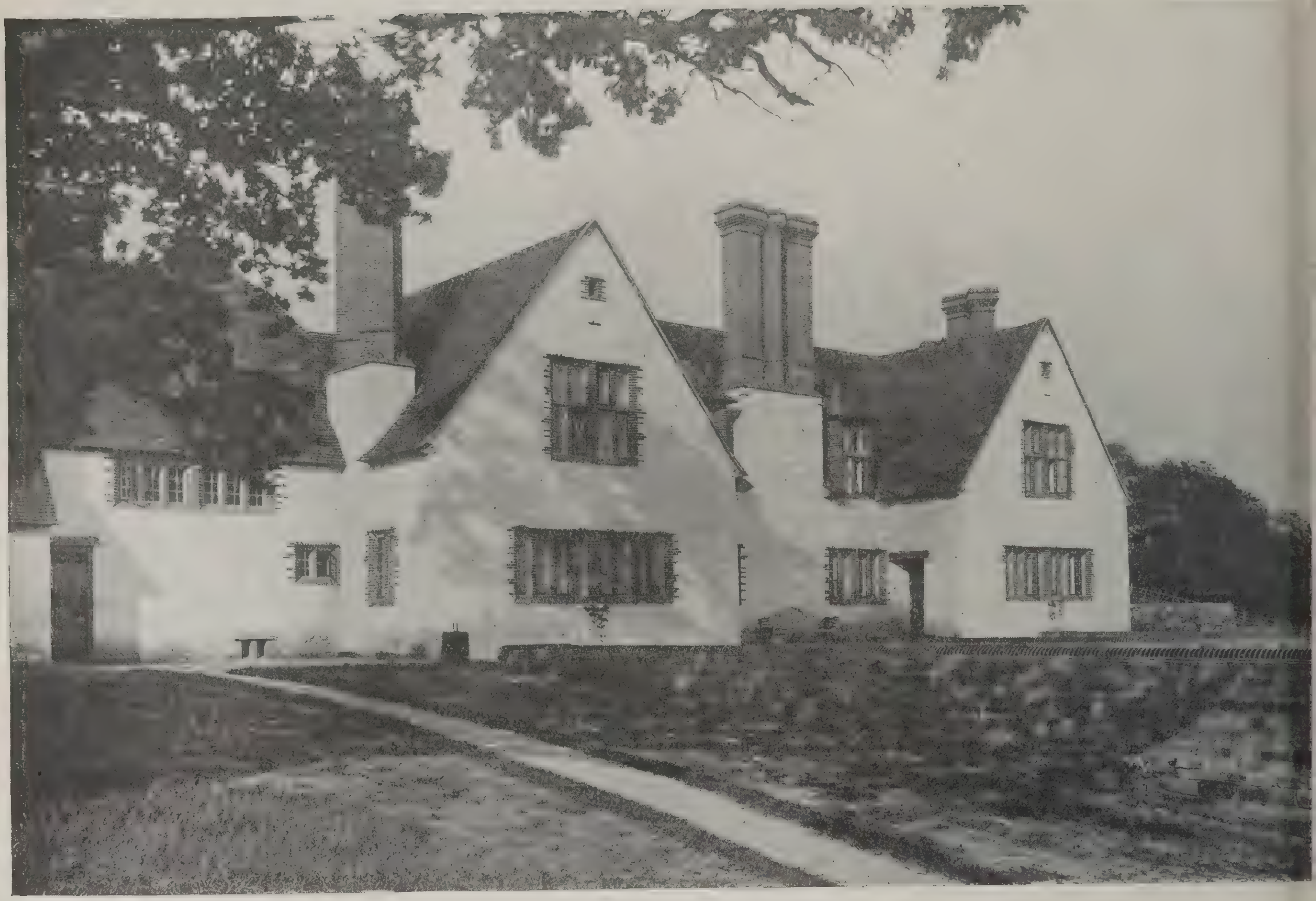
The earlier houses are pretty, picturesque. The drawings for them were fascinating water-colour studies. Good suitable material was always used. There was no commonplace ornament. Sizes and proportions were those common to the best tradition of the neighbourhood; but the material was not the most important consideration.

Gradually the material becomes more important and the picturesqueness becomes less evident, and classic detail takes the place of the Gothic inspiration. The same sequence is to be seen in Mr. Norman Shaw's work, but Mr. Lutyens had the advantage of beginning where Shaw left off. In Mr. Lutyens's work another (and much more important) feeling appears. The general treatment of the buildings becomes much broader, and the feeling for simplicity more marked.

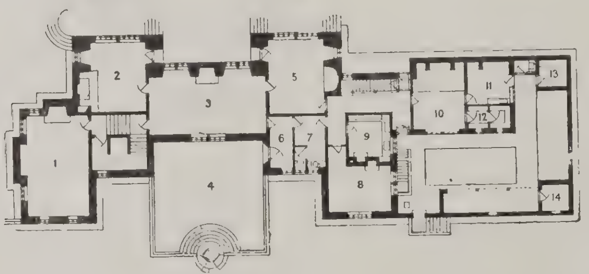
Let me trace this roughly in a chronological list of some of his works: Cottages at Shere and at Godalming—picturesque; alterations at Littleworth Cross—picturesque; house for Mr. Chapman at Farnham—picturesque; Fulbrook House, Elstead—picturesque with classic interior (1); Munstead Wood



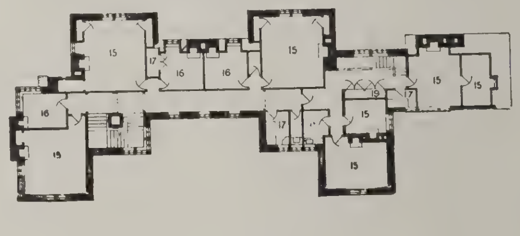
DETAIL OF GARDEN ENTRANCE, "TIGBOURNE COURT," WITLEY, SURREY.
EDWIN L. LUTYENS, F.R.I.B.A., ARCHITECT.



Garden Front.



Ground-floor Plan.



First-floor Plan.

1, Billiard-room; 2, Drawing-room; 3, Hall; 4, Court; 5, Dining-room; 6, Entrance; 7, Lavatory; 8, Servants' Hall; 9, Pantry; 10, Kitchen; 11, Scullery; 12, Larder; 13, Boots; 14, Coal; 15, Bedrooms; 16, Dressing-rooms; 17, Baths; 19, Linen.

BARTON ST. MARY, EAST GRINSTEAD, SUSSEX. EDWIN L. LUTYENS, F.R.I.B.A., ARCHITECT.

—picturesque; Chinhurst, Bramley—picturesque, but broader, Berrydown, Overton—entrance front very simple and broad; Tigbourne Court, Witley—same remark; additions to house for Mr. Chapman; (2) The Deanery, Sonning—in the best manner; The Orchards, Bramley (3); Daneshill, Basingstoke; Marsh Court—interior classic detail; Monkton Singleton, Sussex—a fine brick seaside house; The Hoo, Willingdon (the nearest approach to an unpleasant exterior); Barton St. Mary—pleasant and broad inside and out; Homewood, Knebworth—a building with French detail, yet with a homely feeling on account of its enfolding roof; Hawkhurst: New Place, Shedfield; Middlefield, Gt. Shelford, Temple Dinsley, Herts.

Taking three instances at random: Fulbrook House shows the first sign of—

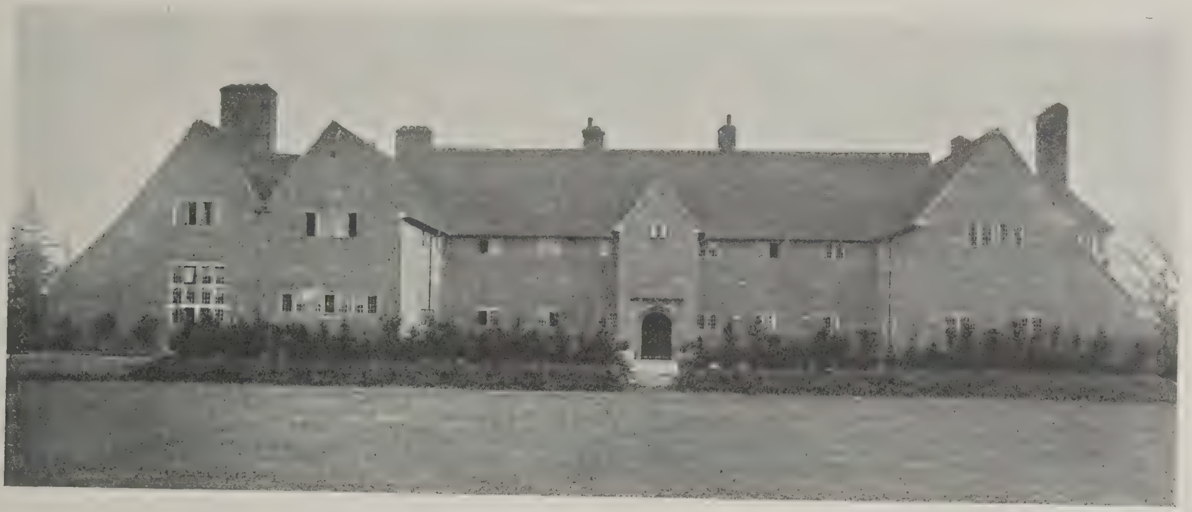
(1) Classic detail in hall and drawing-room, but the outside is picturesque; an enemy might say that it was scrappy. It certainly is not "broad."

(2) Additions for Mr. Chapman, a piece of delightful classic detail, with a strong accent on the bricks; broad and simple; it was planned very ingeniously, so that the old house in t early (picturesque) Lutyens manner and the new additio could not be seen at one time.

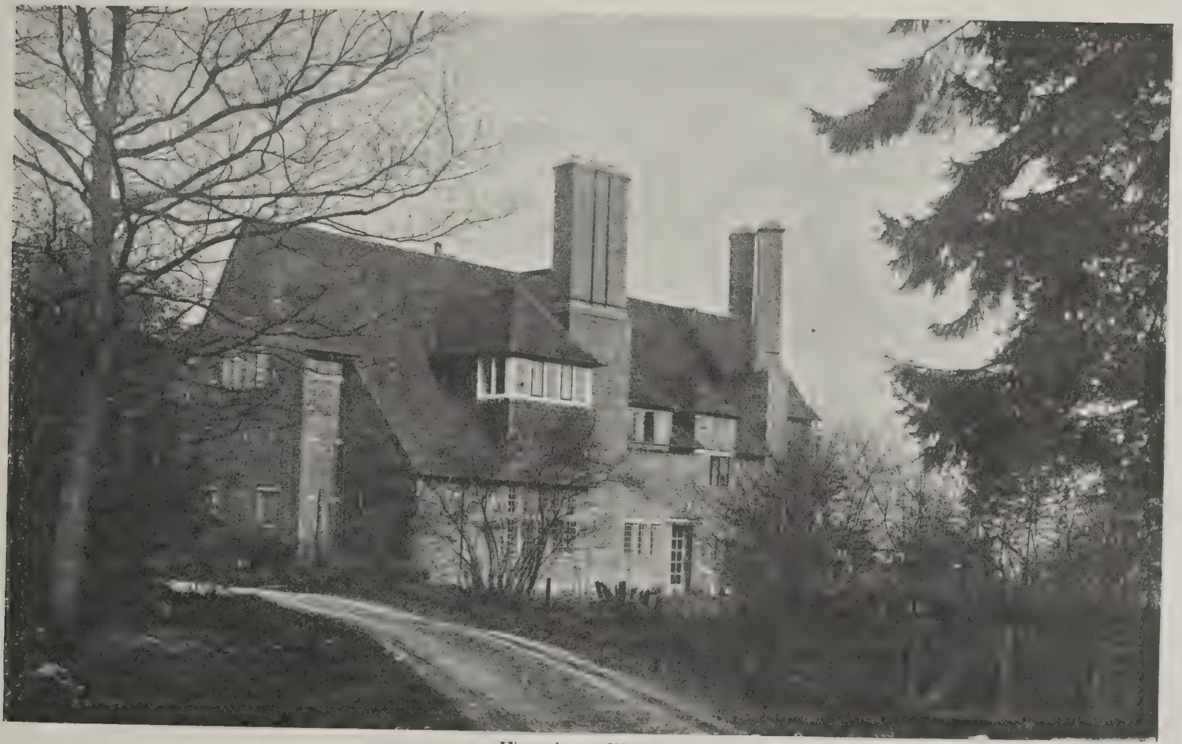
(3) The Orchards is broader; the material, Bargate ston is a very important factor in the design, but not so propo tionately important as the bricks are to Daneshill, or ev in a greater degree to New Place, Shedfield. That is to sa The Orchards might be built of some other material with much difference, but New Place must be bricks. If the bric were altered the house would be a different one. Hawkhu must be stone; it is so essentially a stone building that it m be in a stone county; to transplant it would be to make preposterous.

Mr. Lutyens has always been fond of a strict front, o severe forecourt for his houses. The Deanery, Millmea Bramley, and Tigbourne Court, and many other instanc show it. The house does not lie in a wood, but enclo or protects its garden. The same thing is to be seen in m French châteaux and some Scotch castles. The road fr austere—almost forbidding. When you get through the use the garden comes as a surprise. How splendid some of ose gardens are; how they are welded into the house; and at a background the house makes to them!

Mr. Lutyens must have been born with a love beautiful material and ingenious detail. It would possible to make a long list of the materials and methods construction which have passed into general use through his roduction. His intimate knowledge of the material and its ght and proper use has kept him from the extravagances some of our contemporaries, and from the mere copying old work. He seems to have got to the core of the matter ry early—to have found out the methods on which the old le worked, and so to be not only able to do the thing ey would have done it, but to throw his own personal dis- veness into the work as well.



Entrance Front.



View from West.

"DANESHILL," NEAR BASINGSTOKE, HAMPSHIRE. EDWIN L. LUTYENS, F.R.I.B.A., ARCHITECT.

his town work I cannot speak from so much personal ience. The "Country Life" offices and offices in Kings- have all the refinement of his country work, and show off lassic feeling better. The key blocks in both build- are among the gayest and most beautiful carving of this ny other time. How much they owe to the carver and much to the architect I do not know, but, at any rate, they show that the architect knows enough about it to find a very fine carver.

Mr. Lutyens has in some ways been lucky. It is not probable that he has ever had to sit before an empty board hoping "for the footsteps of a client on the stairs." He has, however, survived a trial which many a great architect has fallen before. He has had an immense amount of work to do at one time, and he has had clients with almost unlimited purses. In these stresses of work his architecture has not fallen off, and his fertility of invention has always been more than equal to the demand. I cannot remember any instance in which the powerfulness of his client has ever resulted in vulgarity or ostentation in the building.

To handle his material aright, to plan so that the interior may be adequate and roomy and simple, the exterior beautiful and quiet and broad, to have such a control of all his work that the detail may be all his own, and essential of the material, and beautiful, to work so hard that he has always time to design, and choose, and eliminate anything not quite right or the best, that has been Mr. Lutyens's aim. It is not an easy task to set out on, and it is not an easy thing to succeed in; and that he has reached that place in the estimation of his fellows and this position in the world, no one will grudge him.

BUILDING INTERESTS OF THE NATIONAL INSURANCE BILL.

The Parliamentary recess has given an opportunity for those organisations whose interests are likely to be affected by its provisions to consider the National Insurance Bill in detail, to examine the amendments already made or proposed to be moved, and to formulate additional amendments.

The National Federation of Building Trades Employers has availed itself of this opportunity rather fully, as appears from the statement which has been sent out to its branches for presentation to local members of Parliament, and also to the Government departments concerned.

The statement reviews the amendments of which notice has been given, or which it is desired to put forward, and gives reasons for supporting or opposing them, the general object being to improve the measure and render it as practical as possible so far as the building trade is concerned. The main points referred to in Part I. are:—

Health Committees.

(Clause 43), in support of Sir Alfred Cripps's proposal to substitute existing Health and Sanitary Committees of Counties and County Boroughs for the Special Health Committees in this clause; or in the alternative adequate representation of employers on the Health Committees is asked for.

Excess Sickness.

(Clause 46), where it is desired to delete sub-section 2 (a) on the ground that the present responsibility of employers under existing sanitary enactments and under the Workmen's Compensation Act is adequate, and that the section is capable of bringing ruin upon individual employers, who may be held responsible for the whole or part of the excess sickness (beyond 10 per cent. of the average expectation) where there has been an outbreak of any epidemic, endemic, or infectious disease.

Limitation of Distraint.

(Clause 51), in support of amendments notified by Sir Maurice Levy, or Messrs. Joynson-Hicks and Gibbs, the effect of which would be to indemnify the owner out of the Insurance Fund for rent held up by reason of the provisions of this clause.

The main points referred to in Part II. are:—

Suspension of Benefits.

(Clause 63.) As now drafted the clause would tend to encourage sympathetic indirect action by which the contributions of employers and others intended for the legitimate purpose of the Act might be indirectly used to finance strikes. It will be remembered that at Nottingham recently the builders' labourers entered upon an eight weeks' strike under and because of the expressed approval of the local trades council. Indirectly this brought the rest of the building trade to a standstill, and by clause 63 as drafted it is suggested that those men would have been entitled to unemployed benefit had the Insurance Bill been then in force.

Compounding.

(Clause 70.) As the clause stands the benefit it proposes to confer is illusory from a building trade employer's point of view, because of the fluctuating character of the trade, and an amendment is suggested to overcome this difficulty.

Failure to Retain Employment.

(Clause 74.) This clause has been objected to by employers as tending to discourage apprenticeship, and a proposal is put forward by Mr. Wedgwood to delete sub-section 1. The Federation steers a middle course on the ground that a test of competency may be at times desirable, but that the insured should not be able to waste his apprentice years, and then be helped to a training at other people's expense, and proposes an amendment which will ensure that advances made under this sub-section shall be repaid by the insured.

Right of Action against Trades Unions.

(Clause 70.) In support of a proposal by Viscount Wolmer to confer on an insured person a right to recover at law all benefits due to him under the National Insurance Act from the approved Society of which he is a member. As Trades Union law now stands it is understood such action would not lie without some such provision as that proposed by Viscount Wolmer.

Discouraging Apprenticeship.

(Clause 81.) The inclusion of apprentices in the definition of a workman under this clause will, it is believed, discourage the indenturing of apprentices, because an identured apprentice cannot become unemployed. The Federation propose an amendment which would strongly encourage the indenturing of apprentices.

Extension of date for coming into force.

(Clause 87.) The Federation suggest an amendment by which the Act would come into force in January, 1915, instead of May, 1912, on the ground that the building trade has long been and still is very depressed, because contracts extending over several years will have to be run off, and being taken in bad times there is no margin to bear the contributions required by the Bill.

What branches will come within the scope of Part II. of the Bill.

(6th Schedule.) The Federation suggests an amendment which will include within the scope of the Bill, quarries, mines, factories and works engaged in the production of materials used in the industries to which the rest of this schedule refers, because unfair handicapping of the various branches of the building trade will occur if the incidence of the Act is limited to workmen employed by builders or on building works. The products of many of the branch trades are capable of serving as substitutes for those of others, hence keen inter-competition for preference. To include some and exclude others from the Act would inflict a serious handicap and cause much dislocation of trade.

The Federation desires the support of all who are interested in building for the amendments to which reference has been made, and which it is believed will improve the Bill and make it more workable.

OBITUARY.

Mr. F. Braby.

Mr. Frederick Braby, F.C.S., F.G.S., of Bushey Lodge, Teddington, who died at his residence last week, aged 82, was the head of the firm of Braby and Sons, who had very large ironworks at Deptford and other places, their speciality being the manufacture of corrugated iron. He was the author of several works, the best known being "A Wonderful House and its Tenant." He celebrated his golden wedding three years ago. His wife died a year later.

TOWN PLANNING: FORM
OR IRREGULAR?*

BY RAYMOND UNWIN, F.R.I.B.A.

Those who say that the town pl
should consist entirely of straight stre
and square places symmetrically arran
upon an axial, pretty obviously ign
both the economic necessities and
great architectural opportunities wh
spring from the fact that the site u
which the plan is to be carried out
in England, in nine cases out of ten,
undulating surface, and contains ma
marked features of an irregular ch
acter. On the other hand, those w
maintain that, because the site consists
hills and hollows, and is marked by wi
ing streams and devious highways,
lands with ragged edges, and the rand
boundary lines of private properties, i
therefore unnatural and out of harm
with the site to plan straight streets
lay out symmetrical groups of buildin
seem to neglect altogether the legitim
function of human design and the ap
cation of architectural principles nat
to a work so intimately connected w
architectural expression as that of to
planning.

In Three Dimensions.

Unless the extreme formalist is p
pared to depend upon gigantic feats
engineering to provide for him a su
ciently formal stage for the display of
design, however formal he may mak
on the paper plan, many sites will p
pranks with the lines of his elevati
In fact, we cannot, if we are to obt
any success, think of town planning
the creation of a pattern in two dim
sions, but must necessarily think of i
three. The formalist will admit that
an undulating surface many of his strai
lines will always be seen as curves,
I cannot conceive any valid reason
he should not curve his lines on pla
by so doing he can secure a horizo
line for his elevation; a matter which
be of vital importance to the formal ef
he aims to produce.

The Fallacy of the Irregular Schoo

Perhaps the essential fallacy of
irregular school is the idea that the
exercise of fancy uncontrolled by
precision of purpose or law of propor
is the natural basis for the highest typ
design in all branches of human activ
Having quoted Ruskin's powerful den
ciation of "the right to do what we li
Mr. Unwin said he would like furthe
suggest that in the alternative definit
first given, he believed, by James Hin
"that liberty is the power to like wha
may do," will be found some reply to
extreme informalist. To maintain
no one is competent to compose, eithe
the form of buildings or in the fiel
town planning on a symmetrical line,
the beauties of proportion and rela
can only be displayed when ax
planned, seemed to him a propos
which is amply disproved by many of
most beautiful buildings, streets,
places which have resulted from the
of the greatest periods of the past.

What is Town Planning?

Answering this question, Mr. U
said that town planning consists in
ing provision for the needs and affor
satisfaction for the aspirations of
organised community. It is its pur
to minister to the convenience of the
habitants, to increase the efficiency

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*Abstract of a paper read before the Archite
Association on October 16th.

their associated industrial and commercial activities, to foster their social intercourse and their intellectual development by the facilities which it affords, and to add to the pleasure of their lives by preserving the amenities of the town as a place of residence. This is, in mere outline, the useful function which town planning must fulfil. The very expression of some of its purposes would constitute town planning an art, and it is impossible, as in the kindred art of architecture, to draw any precise line between the useful purpose and the beauty of the form adopted to satisfy that purpose, the two being intermingled. If properly appreciated both by the citizen and the artist these two aspects of the subject are not antagonistic, but they may become antagonistic if the artist forgets the purpose of that which he is creating and imagines that it is his duty to create something beautiful which the citizens may with an effort make use of, instead of creating something useful and expressing it in a beautiful form.

Practical Limitations.

It may be true that the steep straight street leading over the top of the hill would make an excellent basis for a formal scheme, but if every cyclist has to dismount and push his machine up that hill, and every driver to walk his horse with difficulty down the other side, the purpose of convenient access will hardly have been satisfied, and any beauty which the design may have will be rendered unpleasing by its obvious want of suitability to its proper purpose. We see, therefore, that our plan, whatever its form, must properly satisfy the require- think, the vital touchstone of any art, that the nature of the site. These may be taken as two cardinal principles of successful town planning design, principles which are sufficiently important to overrule any mere question of formality of plan when they are antagonistic to it. Though these practical considerations will often be irreconcilable with some preconceived formal scheme, it is not often that they will be antagonistic to all forms of beautiful expression.

Use and Fitness.

Use and fitness will dictate certain lines of development, but it is seldom that these will be exact lines; rather they will usually be limits of deviation, and it is within those limits which the useful purpose allows that the town planner must keep, and it is of the scope which they afford him that he must take advantage to produce the beauty of form at which he is aiming.

But not only are there limitations due to the useful purposes of town planning, there are, as in other art, limitations due to the medium.

First of all, this art is not complete in itself. The town planner but lays down the general design, creates the opportunities. He must depend upon the architects who come after him to fill in the details and take advantage of the opportunities he has created. He will be able to a greater or less extent to influence the result by determining the position of main buildings, and sometimes by fixing frontage lines and limiting the heights and character of the buildings, but at best he must leave all detail out of his count; he can deal only with the main masses. It is by the handling of these masses of building and the disposition of the spaces or voids between them, by bringing all the masses and spaces into proportion with each other, and the whole into proper relation to the site so as to produce an organic composition, and by this alone, that town planning can speak, can produce its effect. It is by the completeness of the organic composition also that town planning gives expression to the ideas of corporate activity, civic association, and human fellowship, a range of ideas which can hardly, with equal adequacy, be expressed in any other way.

A Touchstone of Art.

If that be so, then our artistic aim proves true when brought to the test which Mr. Reginald Blomfield has well suggested when he says: "This is, I think, the vital touchstone of any art that what it does can only be done by that one particular art." Anything, then, which contributes to the force and clearness of this expression of the organic unity of the city must be proper to the practice of this art, while anything that detracts from or blurs this expression must be improper. It is by appealing to the sense of correlation which springs from spacing and proportion, to the sense of unity which springs from definitely apprehended form, whether in plan by the disposition of the parts upon a level plain, or in elevation by the piling of them up upon the hillside, that alone we can produce this our highest form of expression. We are seeking definiteness of form; it can hardly be right to take informality or irregularity as our means.

Town Planning Should be Formal.

To sum up, I believe, then, that town planning should be formal, using the word in a broad sense and always remembering that there are limits set by the useful purposes that the plan must provide for, by the nature and opportunities afforded by the site, and by the relation of the beholder of the city which he views, all of which will very often cause the essential effects to depend upon a formalism which does not hesitate to depart from exact regularity on the paper plan, when by doing so more adequate expression can be given to some element of the design more essential to the complete unity of the result than the element of formality.

A Book on Penmanship.

"Penmanship" is a new book just issued by Mr. B. T. Batsford, 94, High Holborn, W.C., price 18s. nett. It gives a series of typical examples from English and foreign writing books of the 16th, 17th, and 18th centuries, selected by the late Mr. Lewis F. Day, with short critical notes by Mr. Percy J. Smith, lecturer on writing and illuminating at the London County Council Camberwell and Putney Schools of Arts and Crafts.

A Little Deception at Tattershall Castle.

A correspondent of the "Nottingham Guardian" points out that a little deception was carried on at Tattershall Castle in the "good old times," as witness the groined ceiling of the gallery on the third floor. This is composed of beautiful brickwork, but the joints which are visible have been stuck on, and do not correspond with the constructional jointing. Apparently when this work was done it did not meet with the approval of the noble owner and so the whole of the vaulting was washed over with tinted cement, and new joints put on to suit his taste.

CORRESPONDENCE.

[*The Editors disclaim all responsibility for the statements made or opinions expressed by correspondents.*]
[*Correspondents are asked to be brief, and to write on one side of the paper only.*]

Slatework Contracts.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—A communication has been received by the hon. secretary of the London Association of Slate Merchants and Master Slaters from the Council of the London Master Builders' Association referring to a speech I made at the annual meeting of that Association as reported in a trade journal. The hon. secretary of the Slate Association will doubtless in due course reply. The report erroneously states "Mr. David advocated direct tendering . . . with the building proprietor's architect." Kindly allow me through your columns to again deny the correctness of this portion of the report of my speech, as I did in a letter published in the July issue of the "Slate Trade Gazette" by stating that "I neither advocated direct tendering by the sub-contractor under principal contract at the meeting referred to, nor do I desire to do so."

I may add, Sir, that in the North of England direct tendering is customary, but that in the circumstances ruling in the building trade in London and the South, many difficulties exist to make this undesirable.

A. C. DAVID.

London.

Questions as to By-laws.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—May I comment on two items in your issue for October 4th? First, as to "A By-law Farce." There is no question here of "adherence to the letter of the law." The "victim" is entitled to notice of approval or disapproval of his plans within one calendar month after the receipt of the same by the Urban Authority (Public Health Act, Section 158); to proceed to build after the expiration of such month if plans are in accordance with the by-laws, whether he has received notice or not.

It is probably not an offence to begin before the expiration of the month, provided the intended work is not "in any respect not in conformity with any by-law of the urban authority;" and, further, it has been held that if disapproval of plans is not expressed within a month the urban authority cannot afterwards object to the building according to the plan. In any case the conviction (supposing the facts correctly stated) is without doubt bad.

The second criticism affects the reply of "F. S. I." in the "Enquiries Answered" column with regard to bringing forward shop fronts. The position of the authority is not governed by sections 155 and 156 of the 1875 Act as stated, but by the Buildings in Streets Act, 1888, which repealed section 156 of the old Act. The authority's consent is not required to any work that does not contravene the Act named.

J. H. NORRIS,
Borough Surveyor and Waterworks Engineer.

Godalming.

A BUILDERS' FOREMEN'S PENSION FUND.

Seventeen years ago the Builders' Foremen's Association was founded as the outcome of a feeling that while the workmen had their trade unions and the employers their associations, very little means existed for foremen to discuss matters connected with the trade and to give one another mutual support and assistance. Since its inception, great strides have been made, so that it is now an important organisation with four specific funds, namely, a General Purposes Fund for defraying all expenses incurred in carrying on the business of the Association, a Contingent Fund for the purposes of helping any member in need of assistance, an Insurance Fund which provides £10 for the widow of a deceased member, and a Pension Fund. These funds are all contributory on the part of members, and it is only in respect of the Pension Fund that an outside appeal is made.

Our attention has been drawn to this matter in connection with the forthcoming annual gathering of the Association on November 4th, and being convinced of the excellence of the object, we desire to make an appeal on behalf of this Pension Fund. We shall be very glad therefore to receive contributions of any amount from readers who feel, with us, that a helping hand may thus be extended to a very deserving cause.

All contributions should be addressed to the Editor of the Architects' and Builders' Journal, Caxton House, Westminster.

MANCHESTER'S PICCADILLY SITE: FRESH PROPOSALS.

After a debate extending over three days the Manchester City Council on October 11th passed, by 63 to 55 votes, the following resolution: "That it be referred to a special committee to be this day appointed to consider and report upon the expediency of (1) purchasing the Manchester Royal Exchange undertaking and adapting the existing building for use for the purpose of a free reference library; (2) building upon the Piccadilly site a municipal exchange that would not only fulfil the present and future commercial requirements of Manchester as a great industrial centre, but also make provision for the establishment of a "spot" and "futures" cotton market; (3) and that all existing resolutions of this Council which are inconsistent with the foregoing objects be suspended (except for the purpose of carrying out or completing obligations which have been entered into).

The Piccadilly site referred to in the resolution was formerly occupied by the old Manchester Royal Infirmary. It was purchased by the Manchester City Council from the infirmary trustees for £400,000, and the whole of it is vacant, a considerable portion having already been added to the adjoining thoroughfares. As the closeness of the vote indicates, opinion in Manchester is sharply divided on the question. At a meeting some months ago the City Council decided that an art gallery and a reference library should be erected on the Piccadilly site, but this proposal is suspended by the resolution which was adopted by a majority of eight.

COMPETITIONS.

Walker Gate School, Newcastle-on-Tyne.

The award in connection with the above is as follows: (1) Messrs. Marshall and Tweedy, (2) Messrs. Harrison and Ash, (3) Mr. E. F. W. Liddle.

LIST OF COMPETITIONS OPEN.

October 28. Workhouse Extension, Salford. — Premiums £20 and £10. Limited to architects practising in Salford and district. Particulars from Board of Guardians, Salford.

October 31. New Town Hall, Marylebone.—Premiums, £100, £75, and £50. Assessor, Mr. Henry T. Hare, F.R.I.B.A.

November 30. Technical Institute, Cardiff.—The Cardiff Education Committee invite architects to submit competitive designs and estimates for a technical institute to be erected in Cathays Park, Cardiff. Mr. J. S. Gibson, F.R.I.B.A., has been appointed assessor. Full particulars may be obtained from John J. Jackson, Director of Education, Educational Offices, City Hall, Cardiff, on deposit of £2 2s.

November 30. Hospital, Hastings.—The Joint Committee of the East Sussex Hospital and the King Edward VII. Memorial Fund invite architects to submit competitive designs, etc., for the proposed new hospital. Mr. Edwin T. Hall, F.R.I.B.A., of 54, Bedford Square, London, has been appointed assessor. Conditions and instructions may be obtained from Mr. W. M. Rhodes, East Sussex Hospital, Hastings, on deposit of £1 1s. Premiums of £125, £75, and £50 are offered.

January 20, 1912. Statue at Havana. —Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana, before January 20. The sum of 100,000 pesos (about £20,600) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., where also further particulars (in Spanish) may be seen.

July 1, 1912. City Extension Scheme, Dusseldorf. — Premiums £1,000 and £375. Particulars from the Chief Burgomaster, Dusseldorf.

January 29, 1912. Government Palace, Montevideo.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640, and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

January 31, 1912. Federal Capital City, Australia.—Competitive designs are invited by the Commonwealth of Australia, for the laying-out of the Federal Capital City. Premiums are offered as follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered by January 31st, 1912, to King O'Malley, Minister of State for Home Affairs, Commonwealth of Australia.

No date. Infirmary Extension, Rochdale.—The Board of Management of the Rochdale Infirmary invite architects practising in Rochdale prior to January 1st, 1911, to submit plans, designs, and estimates for extending the present buildings. Conditions of competition and instructions to architects, together with other information can be obtained on application to T. Elvyn Kershaw, Secretary, the Infirmary, Rochdale. An assessor has been appointed.

No date. Central Hall, Offices, and Caretaker's House, Bolton.—The Lancashire and Cheshire Miners' Federation invite architects in practice on their own account within a radius of 25 miles of the Town Hall, Bolton, to submit designs in competition for the above. The Committee of the Federation have appointed as assessor Mr. Jonathan Simpson, F.R.I.B.A., of Bolton. The premiums offered are £50 and £25 for the two best designs in order of merit as adjudged by the assessor. Conditions and instructions will be sent to architects on application to Messrs. Fielding and Fernihough, Solicitors, 7, Fold Street, Bolton, accompanied by a deposit of one guinea (returnable on fulfilment of conditions).

The Regent Street Polytechnic.

Two architects are associated with this new building, recently illustrated in our pages: Mr. Frank T. Verity, F.R.I.B.A., being responsible for the façade, while the remainder of the building has been carried out to the designs of Mr. G. A. Mitchell, A.R.I.B.A.

Rebuilding of Gresham College.

Gresham College, at the corner of Basinghall Street, near the Bank of England, is to be demolished and rebuilt on an enlarged site. The seating accommodation is to be increased considerably, two adjoining buildings having been secured for the purpose. In connection with the rebuilding of the college, arrangements are under discussion for the improvement of the entrance to Basinghall Street.

A Draughtsman's Scale Sketch-Book.

Messrs. Lamley and Co., South Kensington, have forwarded for notice a sketch-book designed to assist draughtsmen in making sketches to a certain scale. The pages are neatly and accurately ruled, on paper that makes drawing a pleasure, to the scale of eight feet to an inch, double sets of figures indexing the sections being printed at top and bottom and on each side of the page, which bears also ruled lines for description and date. The book is, of course, oblong in form, and of convenient size, the actual sections on each page occupying a space 1 ft. wide by 7 in. deep.

Interesting London Town Houses.

Under the title, "London Houses from 1660 to 1820: a Consideration of their Architecture and Detail," Mr. B. T. Batsford, 94, High Holborn, has just issued, price 15s. net, what appears, from the casual glance through it which, at the moment, is all we are able to give, to be a most fascinating book. The authors, Messrs. A. E. Richardson and C. Lovett Gill, have collected a fine series of excellent photographs of architecturally noteworthy town houses, and that these have been reproduced in first-class style the name of the publisher is a sufficient guarantee. We hope to have an early opportunity of reviewing this volume.

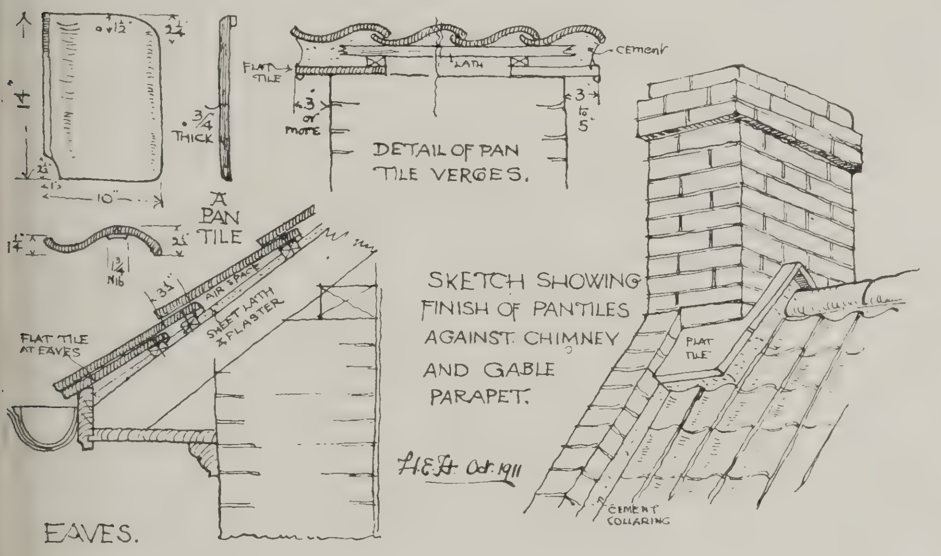
PANTILING.

BY HAROLD E. HENDERSON.

Of late years there has been a revival the use of pantiles for domestic build-gs by leading architects. Constructional xt-books are sadly lacking in simple con-ructional methods, so we find pantiling ten dismissed in a short sentence, if not nitted altogether.

One of the greatest charms of the pan-le roof is the retention of its colour. wing to the curved surface of the tile, e rainwater washes what might be rmed the high lights to a brilliant red, d leaves the concave surfaces to veget-e, so obtaining a texture of colour im-ssible to secure in any other type of of covering. As with all other build-g materials, the old method of laying ntiles should be thoroughly studied in l its details, and note be taken of the av the old tiler finished his eaves, lleys, and verges, etc.

Pantiles are made now practically of the me size and shape as the old ones, and e generally from 13 to 14 ins. long by to 10 in. wide (see illustration). They ry in thickness from ⅝ to ⅞ of an inch, e latter being hand-made. Very few nd-made pantiles, however, are made England, though often supplied as such. om a manufacturer's point of view e difference is that machine-made tiles e smooth, and hand-made tiles are nded, whereas a genuine hand-made ntile is very seldom sanded. Sand vers a multitude of flaws in tile and ick, and should be regarded with sus-ion, as it may conceal bad "metal" and merous imperfections. Another very portant point is to determine if pos-le whether the clay has stood over the nter, and has been well tempered, or ether it has just been dug up and put o the grinding machine forthwith and ulded into tiles the next minute.



It is a moot point whether pantiles uld only be hung by the nib provided that purpose at the head of the tile, whether they should have the additional urity of a nail. Most of the old tiles laid without the nail, but some the iter saw taken off an old building lately d oak pegs driven through a hole at head of the tile and hung to the tens. If nails are used they should be of stout copper 2 in. long, and the nail hole should be 1½ in. from the top; if higher, the tile is apt to break away, while if lower, wet is liable to get in.

A suitable lap for pantiling is from 3 to 3½ in. This allows good cover from the bottom edge of the upper tile to the nail hole of the bottom tile. Some architects bed the head of the tile on a fillet of haired mortar, whilst others contend that the mortar is apt to draw the wet up by capillary attraction and is thus always damp at this point.

There should be a free circulation of air under the tiles, and the rafters should be either bounded or sheet-lathed and plastered (see illustration).

The pitch of a pantile roof may be as low as 32 degrees and as steep as 47 degrees, but if the roof has too great an inclination the water rushes off too quickly, owing to the great velocity resulting from the corrugations of the tiles, and shoots over the eaves gutter. In the old cottages one often sees the lower part of a pantile roof covered with flat tiles or stone slates to spread the water as it runs towards the gutter. Nine out of ten of the old houses roofed with pantiles have gables, and, although the hipped roof is to be seen, the difficulty of cutting the pantiles neatly on the skew makes the gable a more logical feature. Valleys necessarily occur, except in the simplest of structures. The wide black lead gutter below, but the best way, see-eyesore. It is sometimes obviated by close cutting the tiles and forming a secret lead gutter below, but the best way, seeing they cannot be swept round like flat tiles, is the old way of laying two pantiles in the valley and neatly cutting and projecting the tiles of the adjacent roofs over them. A strip of 4-lb. lead may be laid beneath for additional security, but is not really necessary if the tiles are well laid.

The accompanying sketch illustrates a method of finishing the verges so as to obtain a good projection without the use of a barge-board. The usual method practised by the old tilers, however, was to finish the tiles against a gable parapet of brick 4½ in. or 9 in. thick, with a collaring of well-haired cement mortar.

A pantile roof properly constructed is perfectly water-tight; the water gets away quickly, and lead may be altogether dispensed with.

PICTURE EXHIBITIONS.

The Grafton Gallery.

The second exhibition of old masters, "in aid of the National Art-Collections Fund," open at the Grafton Gallery till December 28th, seems just as attractive to the public as the first one, though perhaps not quite equal to it in interest. We have opportunity, however, of studying various interesting pictures by early Italian masters who are not very widely known, and one remarkable one by a Spanish painter, the "St. Michael" of Vermejo, a painter born at Cordova, and the designer, at the close of the fifteenth century, of the windows in Barcelona Cathedral. Among the Italian pictures there is a fine example of Masaccio, and another from a later and very different kind of painter, Andrea del Sarto. Yet it is surprising what a freshness of interest, in comparison with these, there is in coming on Gainsborough's beautiful portrait of "Miss Tatton"; and Reynolds's "Mrs. Bouverie and Mrs. Crewe," too, is superior to any of the Italian paintings exhibited; as to the so-called Titian, "Judith," we are sceptical about it being Titian's. There is no doubt, however, about Nicolas Poussin's "Bacchanal," which is Poussin at his best. There are some fairly good Rembrandts, and two of the rather brutal portraits of Goya, whom the art-critics have made a fashion of lately: also an equally brutal but perfectly masterly portrait by Frans Hals in the central gallery; and Clouet's portrait of Diane de Poitiers, and Jan Steen's well-known portrait of himself as a scamp playing on a mandoline. In short, there is plenty to look at, including a large collection of drawings and sketches, among them a wonderful water colour by Turner, "Man-of-War taking in Stores," said to have been painted one morning at Farnley Hall between breakfast and lunch.

Royal Society of British Arts.

The architect is brought up, in the entrance lobby of this exhibition, by a great architectural drawing—passed over unnoticed, we fear, by most visitors—Mr. A. E. Henderson's restoration of the Temple of Diana at Ephesus, a very fine and elaborate drawing based upon the available remains of the temple; the figure sculpture has been put in by Mr. Gilbert Bayes. The society's exhibitions are looking up; the picture collection commences with two really good and artistic landscapes, "Picnic by the River" by Mr. Muirhead, and "A Welsh Farm" by Mr. Robert Morley; and a little further on we come on an excellent nude figure-picture, "Asleep," by Mr. Palin. Sir Alfred East contributes a large landscape of poetic power, "Solitude," to which we only object that the mid-distance clouds are somewhat too solid and not aërial enough. Mr. Schofield's "Shadowland" is a clever effect of light in a landscape. There are, of course, many poor things in the exhibition, but there is more good work and there are fewer crudities and eccentricities than usual.

Works of the late Frederic Shields.

A collection of Shields's works is on view at the Alpine Club Gallery, which leaves on one rather a melancholy impression of mistaken aims. We are told, in the biographical memoir attached to the catalogue, of Shields's hatred of the modern system of exhibitions, his scorn of the modern jargon of "Art for Art's sake" (which may no doubt be carried too far), and his passionate devotion of his art to the interpretation of religious truths. So he worked apart, with ends of his own, making his designs a form of preaching righteousness, with the result of producing a large quantity of what can only be called mediocre art. We came occasionally on a piece of very good figure-drawing, as in "The Sacrifice of Manoah" and "Obedience" (the latter a figure for a stained glass window); but taking generally these designs on a large scale, illustrating parables and proverbs and sacred personages, they can hardly be said to rank higher than what may be called "Bible pictures," and the sad thing is that Shields evidently could have done something better if he could have shaken off his pre-occupation with his supposed religious mission in art. His small pictures of real life are the best things in the room; his water-colour of "The Plough-boy" reminds one of William Hunt, and is indeed as good as Hunt, and worth a dozen parables. "One of our bread-watchers" is another beautiful little work in the same style.

MISSION CHURCH AND SCHOOLS, LEYTON.

In this design an attempt is made to treat an ecclesiastical building in the spirit of simplicity and reserve which distinguished the architecture of the Romans. The entrance door and the window above it are of Portland stone delicately moulded and carved, the aim being to concentrate the interest on one principal feature: in contrast, the mass of the building, in dark brickwork, is treated with the greatest simplicity. In this way it is possible to give some distinction to an unimportant building without overstepping the narrow limits of the means at disposal for its construction. The perspective drawing by Mr. W. Walcot shows the building and its actual surroundings. The architect is Mr. E. C. Frere, of No. 1, Lincoln's Inn Fields, W.C.

BOOKS.

German Town Planning.

This small book on town-planning art in Germany may be of interest to those who read German. It contains, on separate plates, complete well-printed plans of eight German towns: Dinkelsbühl (in 1898), Würzburg (1878), Munich (1806), Rothenburg (1908), Nördlinger (1906), Rostock (1814), Erlangen (1906), and Karlsruhe (1834). Of these, Erlangen is a remarkable town plan, laid out mainly as a great parallelogram, with long parallel avenue in one direction, connected by shorter streets at right angles to them, the centre being a large formal garden or park, with the Schloss nearly central at one end of it. Nördlinger is an unusual plan, in a wide oval surrounded by a ring street on the line of the old fortifications, as at Vienna, and an inner irregular oval street line, connected with the outer ring by cross streets at approximately equal distances. This inner oval appears to have been prompted by the outer oval line of the ring street, the line of which was probably settled originally by the nature of the ground. It is a curious example of a town plan somewhat artificial in its general lines, which appears nevertheless to have grown up naturally in obedience to local circumstances. The text contains numerous photographs of localities in various cities, combined with sketch plans of points in their planning.

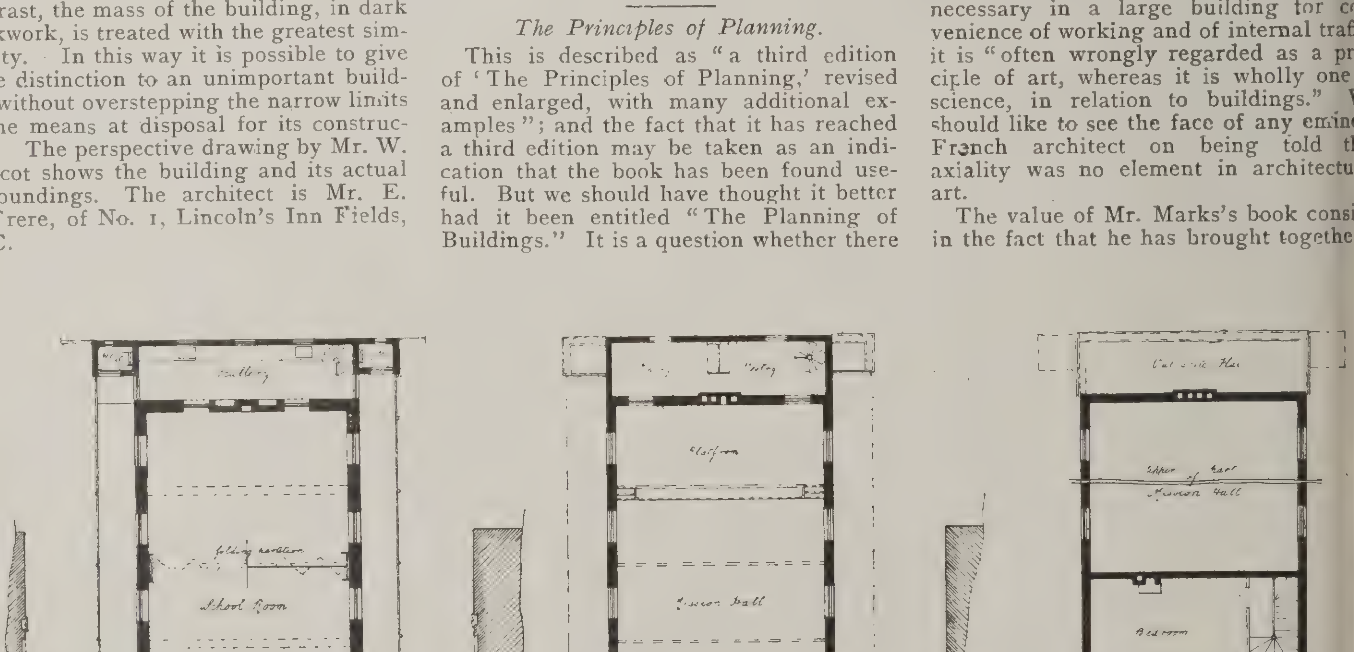
Deutsche Stadtbaukunst in der Vergangenheit. Von A. E. Brinckmann. Frankfort: Heinrich Keller; 1911.

The Principles of Planning.

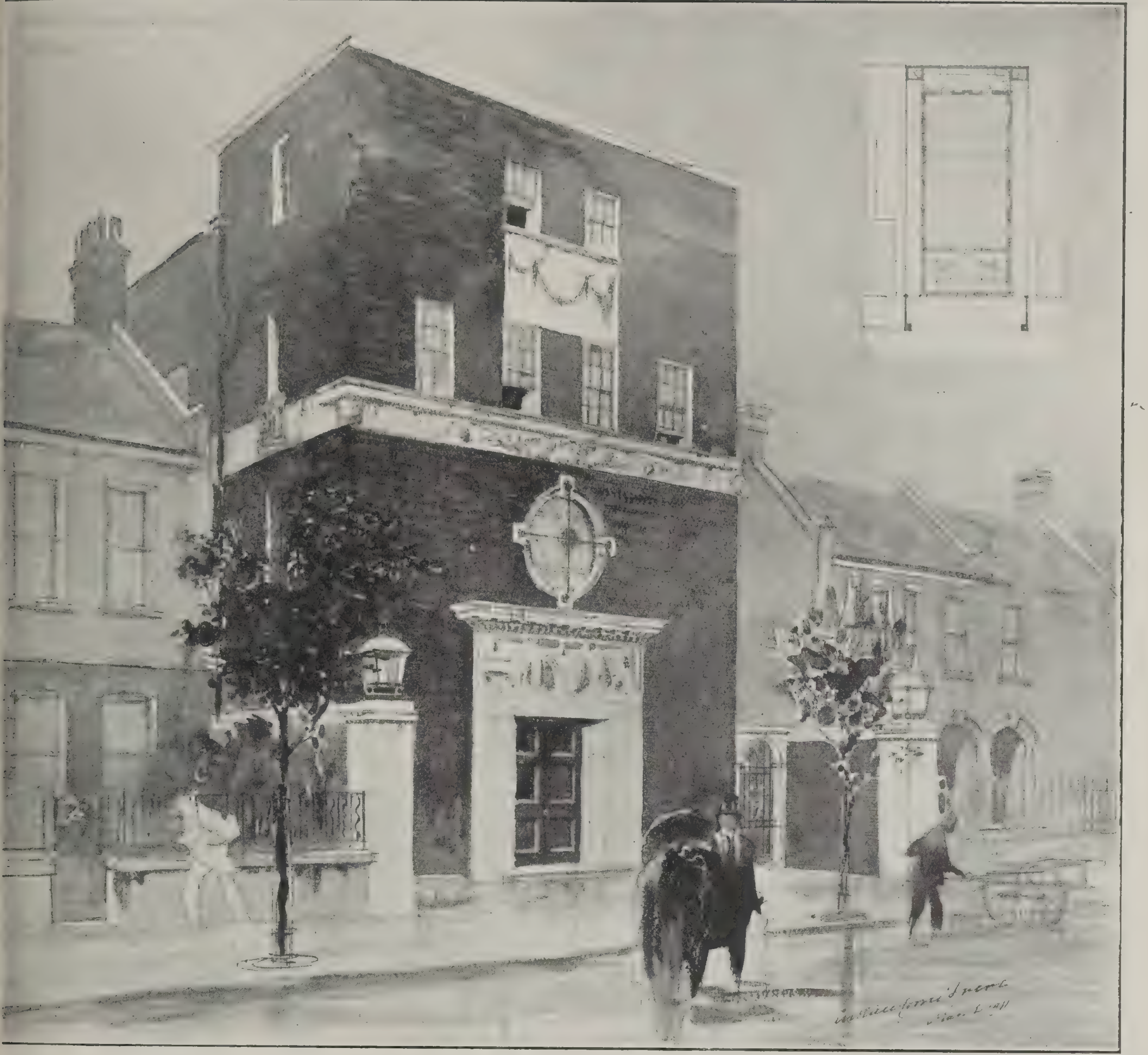
This is described as "a third edition of 'The Principles of Planning,' revised and enlarged, with many additional examples"; and the fact that it has reached a third edition may be taken as an indication that the book has been found useful. But we should have thought it better had it been entitled "The Planning of Buildings." It is a question whether there are any "principles of planning" whi can be said to be generally applicabl each plan is a problem in itself, co ditioned by the requirements of the buil ing and the shape and extent of the ava able site; and though it may be truly sa that all plans should be arranged so as ensure the greatest convenience of i ternal working in regard to the purpo of the building, and to avoid wasted spac there are general considerations of co mon sense, which can hardly be elevat into "principles."

The short chapter which consists in "enunciation of broad principles," co tains two most astonishingly naïve r marks. The author tells us that "pla ning in its relation to elevations must borne in mind while working on t scheme, as it will be found to be adva tageous to the plans, and not detriment to the elevations to any appreciable e tent." Indeed! We had always su posed that the whole art of architectur design consisted exactly in thinking o the creation of a building in plan, sectio and elevation, as a whole conception, a that a man who set about planning building without a thought of its exter appearance and grouping simply did n understand his business. And here are told merely that some thought abo the relation between elevation and pl "will not be detrimental to the elevati to any appreciable extent." It would very strange if it were, considering th the elevation is, or ought to be, the ou ward expression of the plan. In rega to axiality we are told that while it necessary in a large building for co venience of working and of internal traff it is "often wrongly regarded as a pri ciple of art, whereas it is wholly one science, in relation to buildings." V should like to see the face of any emine French architect on being told th axiality was no element in architectur art.

The value of Mr. Marks's book consi in the fact that he has brought together



MISSION CHURCH AND SCHOOL, BLOXHALL ROAD, LEYTON



MISSION CHURCH AND SCHOOL, BLOXHALL ROAD, LEYTON, E. E. C. FRERE, ARCHITECT.

ber of plans of many different types nlding, with a considerable amount of mation in regard to them, and the ons for their arrangement. This is y useful, and may be especially so oung architects who want suggestions lanning. But in regard to house ning they must not take the plans n as models in all respects. A ority of them, for instance, show that non heresy among English architects, the drawing-room and dining-room ld have the same aspect, whereas, as as lighting is concerned, they ought ys to have a different aspect, where site renders it possible. In one plan ee drawing-room, library, and dining- all with large windows facing the way, which is bad planning, and ing is said to draw attention to it. ty of sun in a drawing-room is very sant, because you can always move of the direct sun-light, but people at er with a western sun full in their are fixtures, and must abide the in- enience, or have the room darkened drawing down the blinds. Everyone who has lived for some time in a house with a dining-room facing full west must have experienced this inconvenience, and it is astonishing that so many house architects seem incapable of realising it. Nothing is said in the aspect chapter about the kitchen window, which should be north or east; and opportunity might have been taken to point out that in three out of four plans published or built, the kitchen light is on the wrong side of the cooking-range; it ought to be on the left; another point that architects do not seem to realise. In the author's own plan on Plate LXXXII. (the upper one) the kitchen, which has a small cross light by the fireplace, may be intended to have a top light as well; if not, it would certainly be too dark: the kitchen in the lower plan is properly lighted.

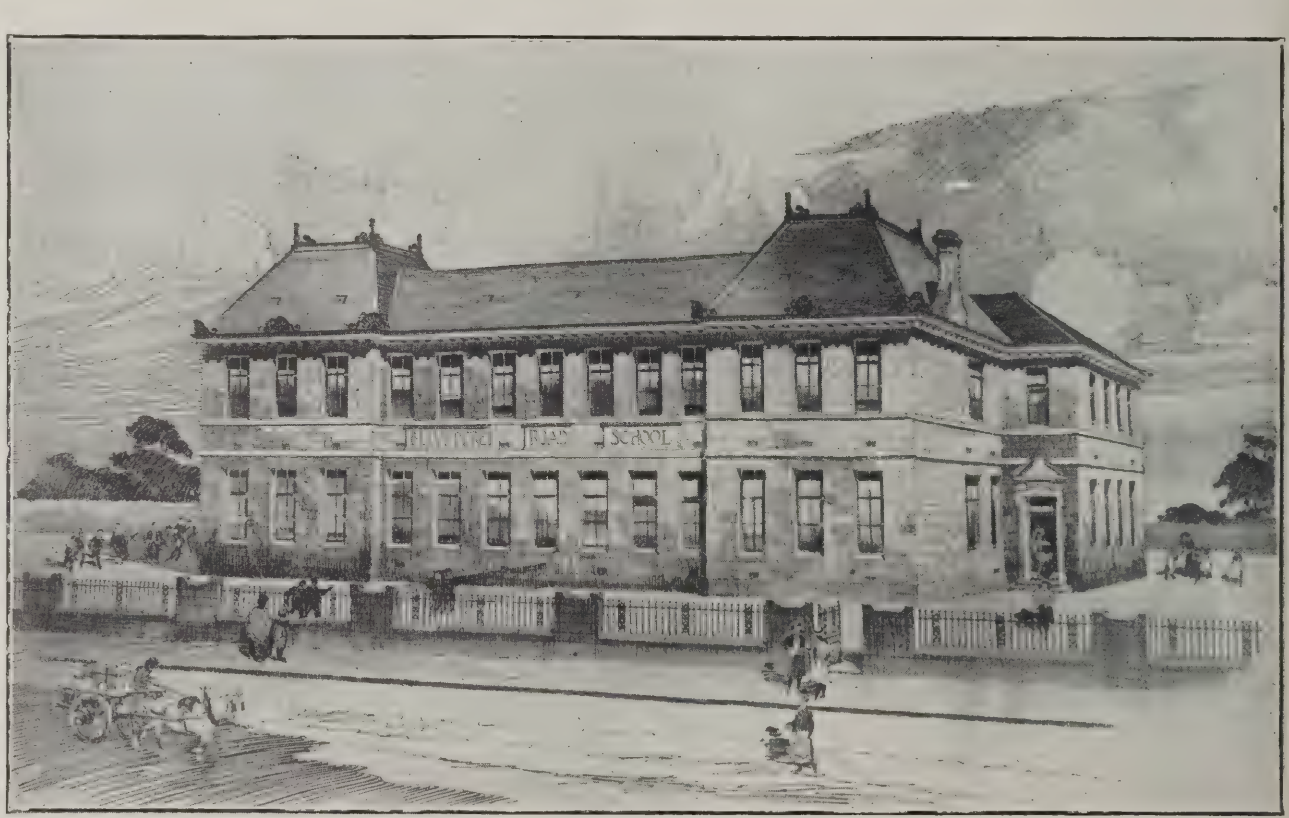
The book contains a useful table of memoranda, and some extracts from official requirements as to buildings, which it is convenient to have in the same volume. Literary style is not of much consequence in a book of this kind, but it would have been better if the author had omitted the passages which he apparently believes to be humorous; and if his book reaches another edition we should seriously recommend him to cut out the chapter on the "Enunciation of Broad Principles," which does the book more harm than good, and to adopt the less pretentious title, "The Practice of Planning," or "A Book on Planning," instead of assuming the existence of "principles" which it is not very easy to define.

The Principles of Planning Buildings; an analytical Treatise for the use of Architects and others. By Percy L. Marks, architect. London: B. T. Batsford; 1911. 12s.

Elementary Building Construction.

Evidently this manual is in high favour as a text-book for class-study, as apparently a new edition is required at the commencement of each autumn session of the polytechnics and similar institutions. Its adaptation to this purpose is marvellously exact. In the present edition the subject-matter has been carefully revised throughout, and the following subjects have been either newly introduced or more fully treated: Isometric projection, monolithic brickwork, bonding of brick footings, hollow or storm walls, facing bond, fixing bricks, example of face jointing in masonry, polishing of marbles, calculations of strength of timber pillars, expansion joints for girders and trusses, quotations from the L.C.C. General Powers Act, 1909, prevention of dry rot, relative position of members in a typical roof, ferro-concrete for roof construction, description of door hinges, and the new rules for the admeasurement of slating and tiling. The book has obviously a wider field of utility than that provided by the class-room, since it affords an excellent means either of initial private study or of occasional consultation on points that one may have mastered long enough ago to render necessary an occasional refreshment of the memory. We think, however, that the value of the work would have been considerably increased if more space had been given to an explanation of the principles of reinforced concrete construction; the time having arrived when this system demands its fair share of attention in building construction text-books, which are incomplete to the extent to which they ignore it.

Building Construction and Drawing. A Text-Book on the Principles and Details of Modern Construction. By Charles F. Mitchell, assisted by George A. Mitchell. First stage (or elementary course). Eighth edition, revised and enlarged (eighty-second thousand). With about 1,100 illustrations. London: B. T. Batsford, 94, High Holborn. Pages x.—470, $7\frac{1}{2}$ins. by $5\frac{1}{4}$ins., price 3s.



NEW SCHOOL, BELVIDERE ROAD, BELLSHILL, GLASGOW. BRUCE AND HAY, I.A., ARCHITECTS.

Practical Mathematics and Geometry—New Style.

New requirements by the Board of Education with respect to the teaching of practical mathematics have been met in this volume by teachers who are specialists in this kind of tuition. They have aimed at providing a comprehensive course of instruction in practical mathematics, "and particularly a text-book which deals fully with the practical application, in the engineering and building trades, of the various principles set forth." There can be no doubt that this is the right method of approach. If principles cannot be expounded and illustrated by application to examples drawn from everyday practice, so much the worse for the principles; and common sense suggests that the divorce of principle and practice is in most instances unnatural, unnecessary, and strongly destructive of the interest which is peculiar to the actual and the concrete. One could understand a young craftsman, keenly interested in his calling, and determined to master it scientifically, finding real enjoyment as well as profit in this book, whereas the old academic method of juggling with detached abstractions might merely disgust him. We think, however, that there should have been thoroughout a clearer identification of the particular practical operations to which the problems may be referred; and we do not understand the expression "mathematics and geometry." Surely geometry is a branch of mathematics.

The subjects dealt with in the fifteen chapters comprised in this book are—Trigonometry and applications, tangential arcs of circles, loci, mensuration, algebra and squared paper, conic sections, vectors, rates of increase, descriptive geometry, projections of simple figures, the plane in space, plane figures in given positions, intersecting planes, planes and lines, and plane sections and developments of surfaces. Examination tables, including logarithms, as well as a few examination papers, are given in appendices. The book seems to us to be admirably adapted to promote the more rational and practical views of applied mathematics which have lately begun to prevail, and as it meets a ger
ally acknowledged requirement and ha
distinct mission, it will no doubt at o
take its place as a standard text-bo
on advanced practical mathematics.

Practical Mathematics and Geometry. A text-b
for Advanced Students in Technical and Tr
Schools, Evening Classes, and for Engine
Draughtsmen, Architects, Surveyors, etc. By
ward L. Bates, Lecturer on Geometry at the L.C
School of Building, Brixton, London; and Frede
Charlesworth, Whitworth Exhibitioner, Lecturer
Practical Mathematics and Geometry at the So
Western Polytechnic Institute, London. Part i
Advanced Course. Containing numerous Pract
Exercises, with Answers, and about 300 Illustrati
London: B. T. Batsford, 94, High Holborn.
pages, $7\frac{1}{2}$ins. by $5\frac{1}{4}$ins., price 3s. net.

Calculating the Strength of Columns

Mr. Theodor Nielsen, who is a mem
both of the Danish and of the River Pl
Institutions of Civil Engineers, has
this treatise worked out the results
researches by Professor A. Ostenfeld,
Copenhagen, showing their applicati
as a rapid means of arriving at a relia
cross section of a mild steel column, a
in general at the strength of any colun
The examples are supplemented
tables, and by practical informat
which has been collected by the auth
With the formulæ evolved by or deduc
from Ostenfeld, those of other authoriti
such as Tetmajer, Claxton Fidl
Lütken, Euler, Rankine, and J. B. Joh
son, are usefully co-ordinated, and so
of their conclusions are further compar
graphically in a short series of diagran
in each of which the curves representi
the conclusions of several authorities a
plotted together. A short appendix su
marises the results of Professor Tetmaje
column tests with oak and four differe
classes of pine.

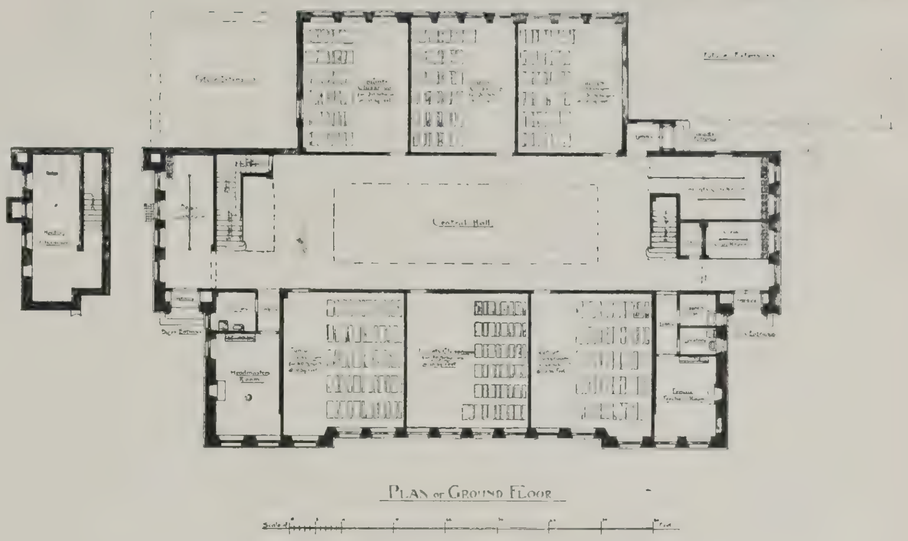
Calculation of Columns. A Practical Applicat
of the Theory. By Theodor Nielsen. London:
and F. N. Spon, Ltd., 57, Haymarket. Pages vii
36, $8\frac{3}{4}$ins. by $5\frac{3}{4}$ins., price 4s. 6d. net.

A NEW GLASGOW SCHOOL.

orty-three designs were submitted in petition for the new school at Bellshill, r Glasgow, the successful architects ng Messrs. Bruce and Hay, L.R.I.B.A., , Glasgow. The school has now been pleted, at a cost of £6,000.

here are two entrances to the site, and building stands about 30 ft. from the lic road. The principal feature is a re hall 76 ft. long by 26 ft. wide, with ious stone stairs and cloak-rooms at end. The three entrances to the ol each pass through a glass door this hall. On the ground floor are classrooms, accommodating 320 pupils, headmaster's and female teachers' ns, with lavatories, stationery room and ners' closet. On the upper floor are classrooms, accommodating 320 lars, male teachers' room and lavatory, k store and cleaners' closet. Provision been made for adding at a future time classrooms to enter from the central , in the same way as the present class- ns.

he entrance doors have been freely ted with polished and moulded rybats pediments, and the rest of the building arried out with square-dressed stone polished rybats, lintels, and sills.



BELVIDERE ROAD SCHOOL, GLASGOW.

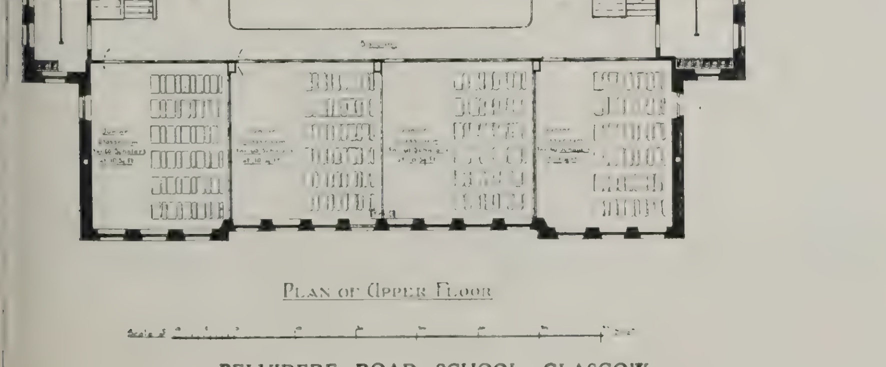
GAZINES AND REVIEWS.

he "Art Journal" is still a good deal upied with furniture, the frontispiece ng a coloured print of "A Settee at ton House." Mr. W. G. Thomson tinues his articles on "Tapestry Weav- in England." The history of the ral encouragement given to the Mort- e tapestry atelier by Charles I. goes to explain the success of the art in gland at that period, when it was re- ed to as "the noblest manufactory t any King of England hath brought in se many hundred years." Yet there ms to have been little or no perception hat time of the special qualities which ht to distinguish tapestry design; the strations given are nearly absolutely orial in treatment, except in regard to decorative borders. "The Bookbind- s of Roger Payne" (by Mr. Cyril Davenport) is a subject which is still of interest; the designs are beautiful, especially No. 5, with an oval centre. Under the heading "Piranesi or Adam," Mr. Darcy Braddell, we think, quite disposes of the claim recently made for Piranesi as having been the real author or inspirer of Adam's furniture design. The fire-place actually designed by Piranesi, which is given as an illustration, is bad and clumsy in detail, and as inferior as possible to the best of Adam's work of the same class. Piranesi was a greater man than Robert Adam, but his greatness lay in an entirely different direction from that of furniture design.

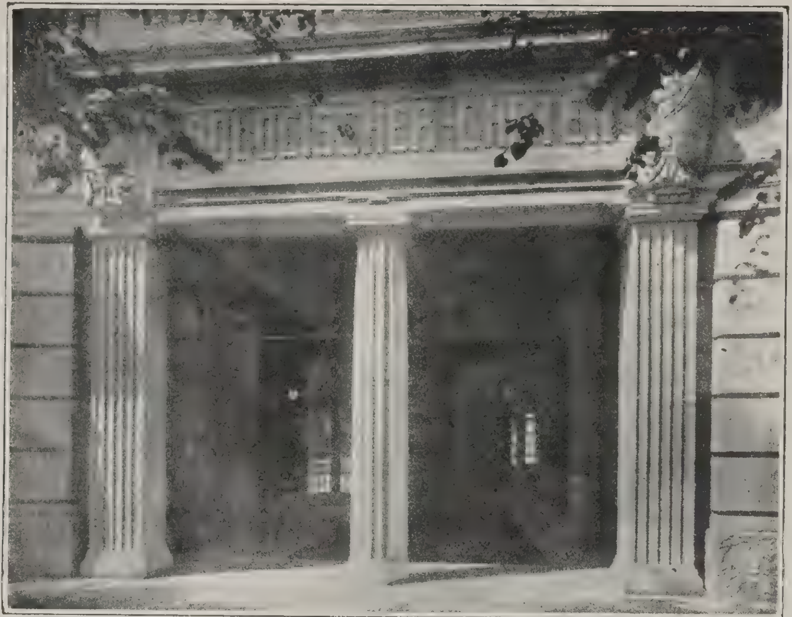
The "Burlington Magazine" strikes rather a new note by its frontispiece giving a coloured reproduction of an English wall painting (at Chichester) of the Virgin and Child, as an example of the "English Primitives" in painting, with a note by Mr. W. R. Lethaby, who thinks that these early English church paintings have been unduly neglected. That may be, but there are not many of them that can be regarded as equal to the tender and expressive though naïvely drawn picture here illustrated. To call it "a great work of art," from the central point of view, is going a little too far; but in the matter of conception and expression it would have been a great work if the painter had known better how to draw. "Chinese stone sculptures at Boston" (i.e., the Boston Fine Arts Museum) are interesting, but the newly invented tendency to find great qualities in Chinese sculpture and painting will hardly be justified by these examples. The over-estimate of Chinese fine-art work appears to be one of the latest crazes in the art-world.

The "Gazette des Beaux-Arts" contains articles on three very interesting subjects; "The Marbles of Versailles," an article by M. de Nolhac, dealing especially with the numerous statues in the gardens, more meritorious and by more eminent sculptors (many of them) than is generally realised; the antique paintings in the Vatican Museum; and a sculptured Madonna and child, by Bernini, which has long been in Nôtre Dame, but appears to have been little noticed; from the illustration it seems to be a work of great grace and dignity, though not without the trail of Bernini's habitual theatrical quality in sculpture.

The "Architectural Record" (New York) is entirely devoted this month to domestic architecture, the articles and illustrations being prefaced by the general axiom that "the tendency is more and more to reflect the æsthetic perception of the architect combined with the dominant characteristics of the owner in the country house of to-day"; a sentence which seems to us to be rather pretentious. In what way, one may ask, are the dominant characteristics of the owner reflected in any of the houses here illustrated? We think it would puzzle the author to show them. Some of the houses illustrated are good, but the feeling for picturesque originality in the smaller class dwellings seems to be rather on the wane. We notice, in the illustrations of the house of Mr. Tracy Dows (Messrs. Albro and Lindeberg, architects), that the old Colonial proportions of columns, made in wood, and of a tenuity suitable to that material, are revived—whether in wood or not we cannot say, but it looks probable. The effect is not very good, and it seems a doubtful expedient to revive deliberately what was



BELVIDERE ROAD SCHOOL, GLASGOW.



NEW BUILDINGS, ZOOLOGICAL GARDENS, BERLIN: ENTRANCE TO GARDENS.
JÜRGENSEN AND BACHMANN, ARCHITECTS.

originally the result of naïvete or possibly of ignorance. But perhaps these long columns represent "the dominant characteristics of the owner."

The "Berliner Architekturwelt" is mainly occupied with the work of one firm of architects, M.M. Jürgensen and Bachmann, who seem to have done a considerable amount of very good new building in the Berlin Zoological Gardens, which is certainly on a much higher level than the Zoological Gardens architecture we are accustomed to see. We reproduce two of the entrances.

In "Harper" a lady contributor, Mildred Stapley, offers some remarks on the American high building, under the title "The City of Towers." It is practically a kind of appeal in their favour as being not so bad as they are called; and there are some sketches given. One point the writer notes which is rather striking; the mass of high buildings in New York are in the business part of the city, which is totally deserted at night; and she says (and one can well believe) that few city effects can be more impressive than the dead silence of night among these enormous structures towering up into the darkness of the night.

In the "Century" an article on "The Garden in Town" contains some good suggestions for getting the best out of small gardens in the middle of a city.

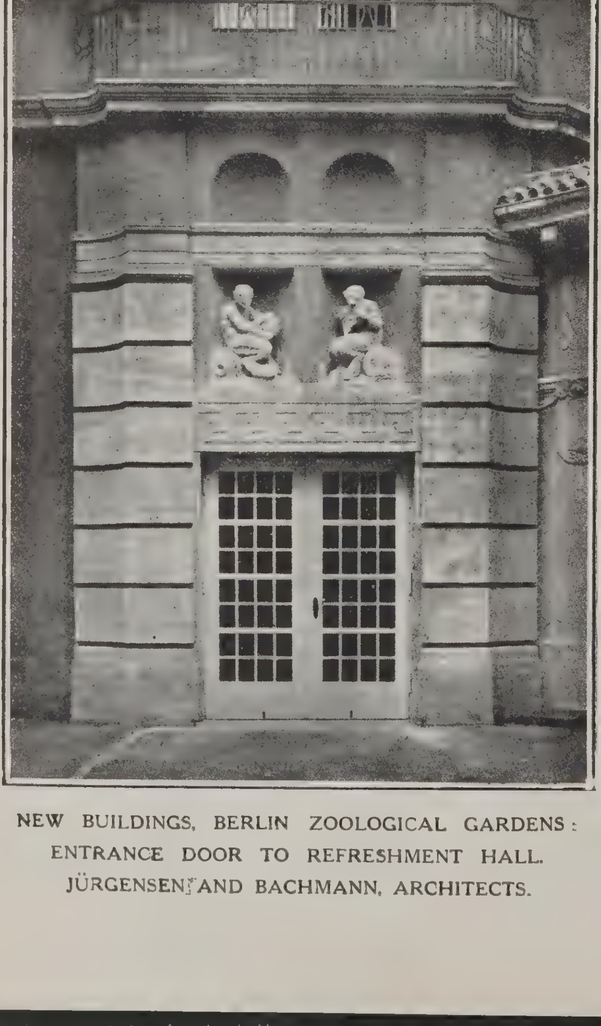
DETAILS, OLD & NEW.—XXI

*Chimneypiece and Panelling in Boa
Room, North-Eastern Railway Offices
Westminster.*

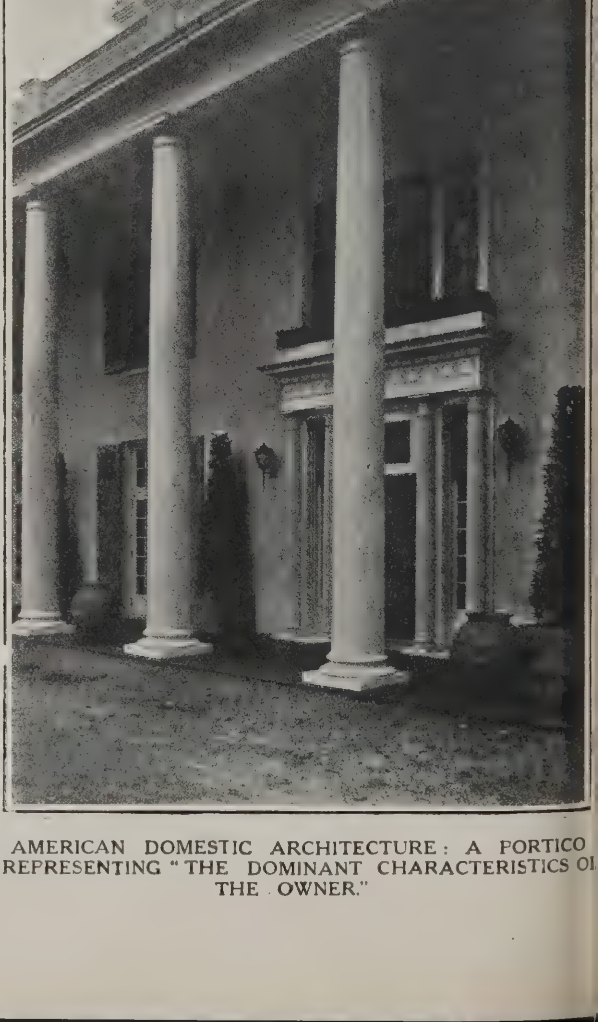
The chimneypiece in this room, of whi
a large illustration was published in
issue for October 5th, 1910, forms
integral part of the architectural schen
as shown by the drawing reproduced
p. 416 of this issue. The work is execut
in English oak, the panel over the chi
neypiece being inlaid with dark and lig
woods and surrounded by carvings in li
wood of flowers and fruit. A photogra
of the panelling is reproduced on p. 3
and a detail of the carving to the chimne
piece on the opposite page. The arc
tects were Messrs. Horace Fie
F.R.I.B.A., and E. Simmons.

Town-Planning in East Denbighshire

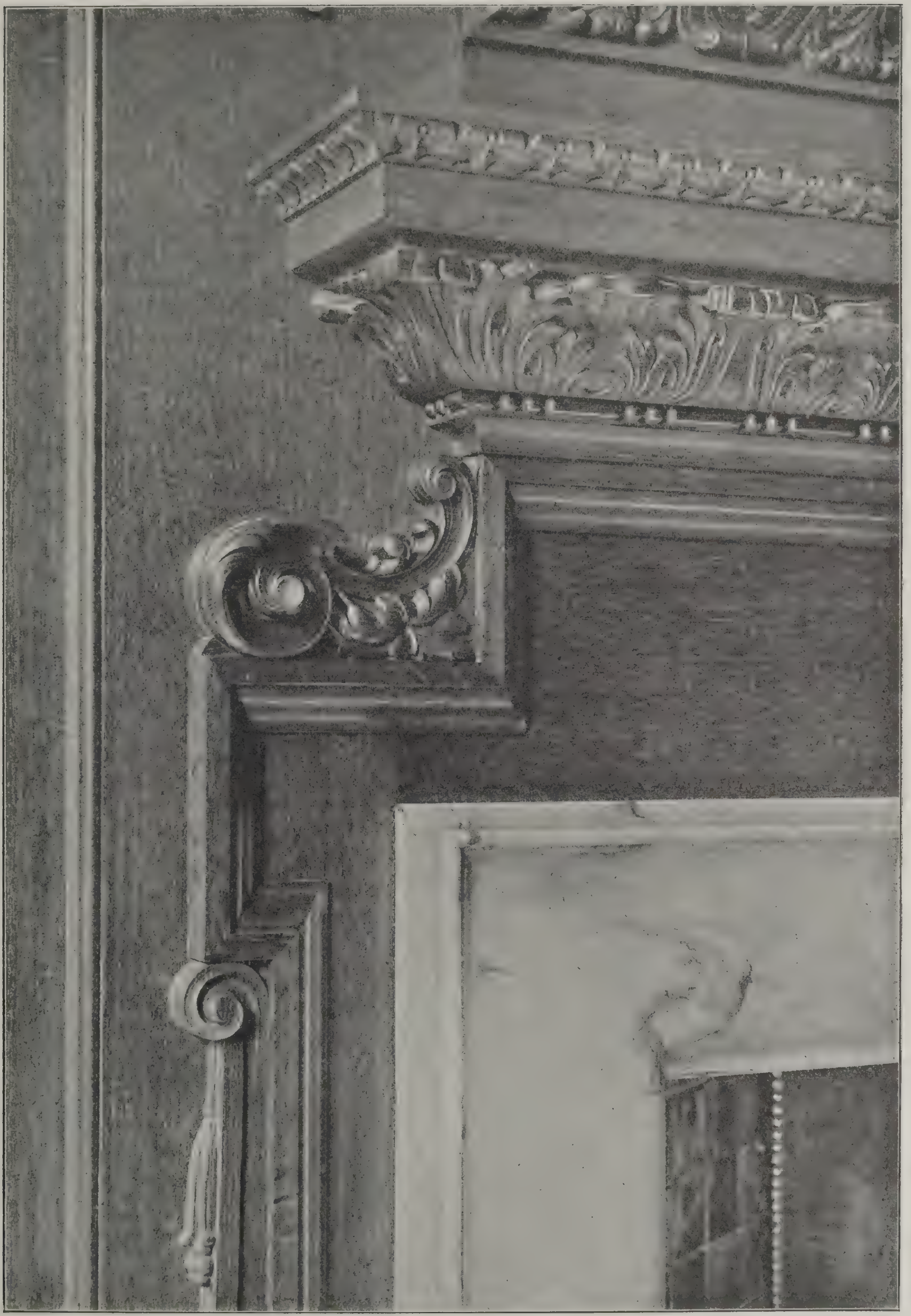
At a meeting of the Wrexham Ru
District Council last week, a resoluti
was adopted to the effect that the Cou
cil take steps to apply to the Local Go
ernment Board for sanction to prepa
a scheme under the Town Planning A
A large new colliery will shortly
worked midway between Gresford a
Wrexham, and houses will be wanted f
the employees and their families, a
the mover of the resolution contend
that it was the duty of the Council
keep an eye on that part of the area und
their control, and give wise counsel a
guidance to those who might underta
to erect houses upon it. A committ
was appointed to confer with a committ
of the Wrexham Town Council wi
reference to the desirability of prepari
schemes under the Act in regard to la
near the borough boundaries whi
appears likely to be developed.



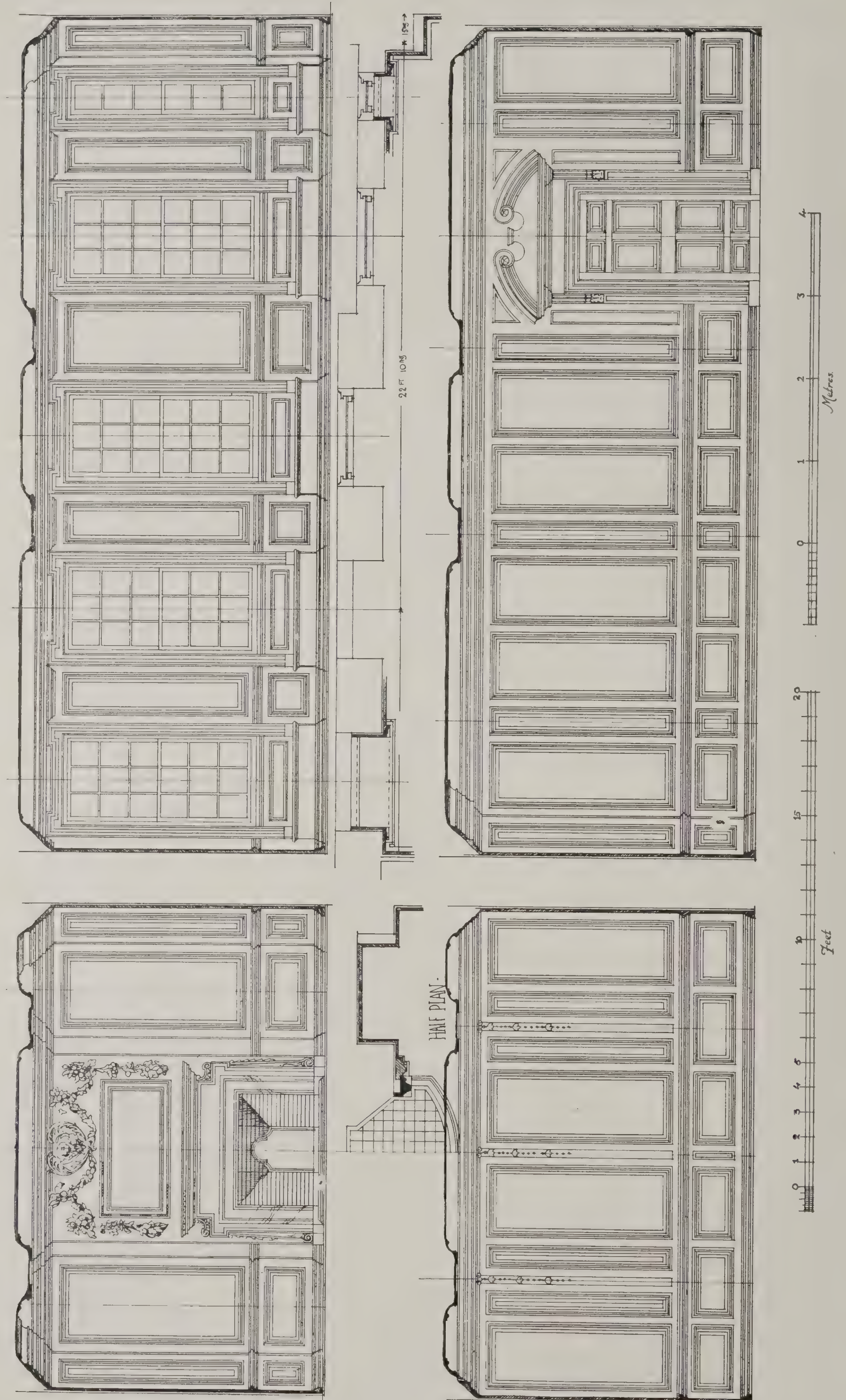
NEW BUILDINGS, BERLIN ZOOLOGICAL GARDENS:
ENTRANCE DOOR TO REFRESHMENT HALL.
JÜRGENSEN AND BACHMANN, ARCHITECTS.



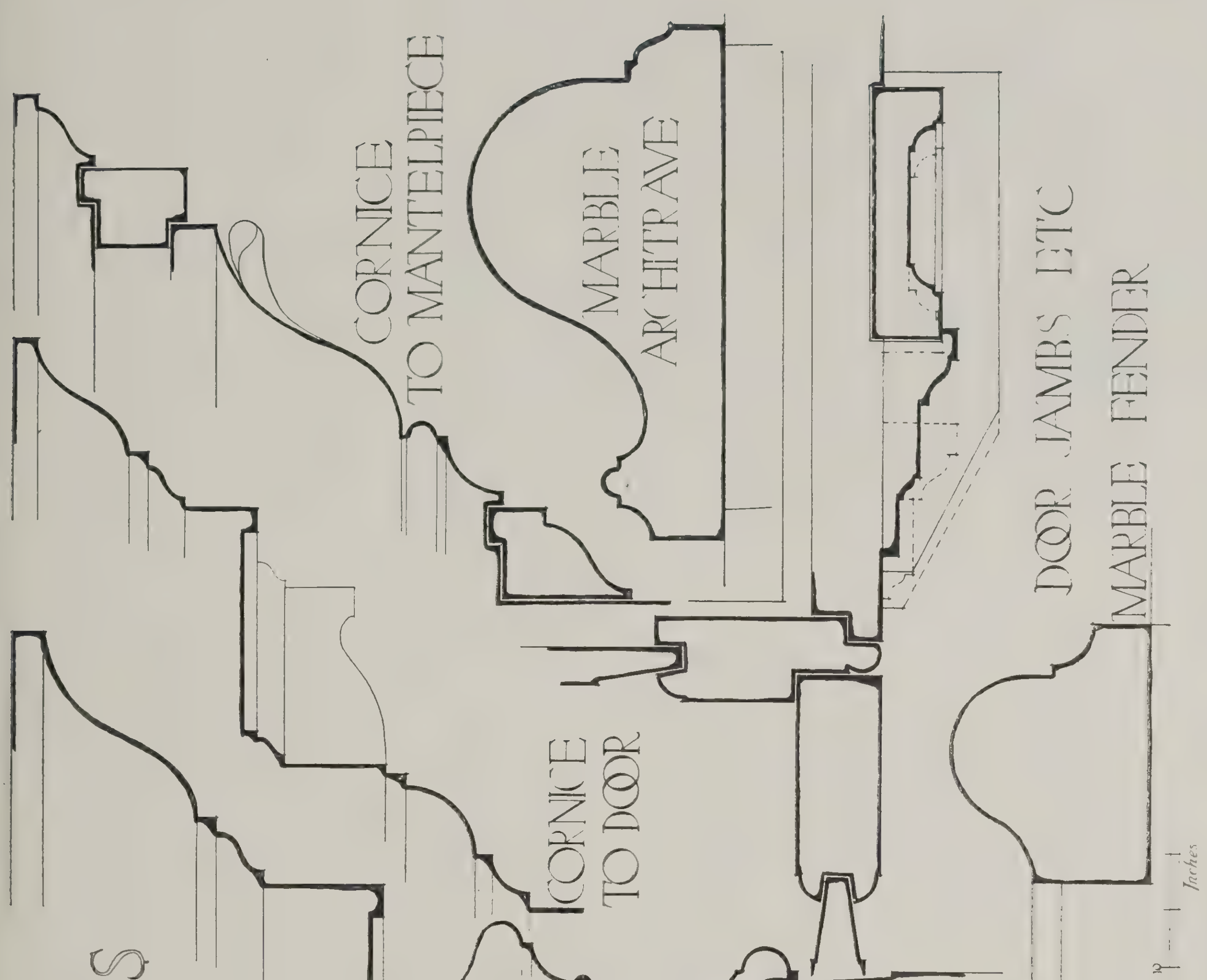
AMERICAN DOMESTIC ARCHITECTURE: A PORTICO
REPRESENTING "THE DOMINANT CHARACTERISTICS O
THE OWNER."



DETAIL OF CARVING ON CHIMNEYPIECE IN BOARD-ROOM, N.E.R. OFFICES, COWLEY STREET, WESTMINSTER. HORACE FIELD AND SIMMONS, ARCHITECTS.



CHIMNEYPIECE AND PANELLING IN N.E.R. OFFICES, COWLEY STREET, WESTMINSTER. HORACE FIELD AND SIMMONS, ARCHITECTS. DRAWN BY C. A. FAREY.



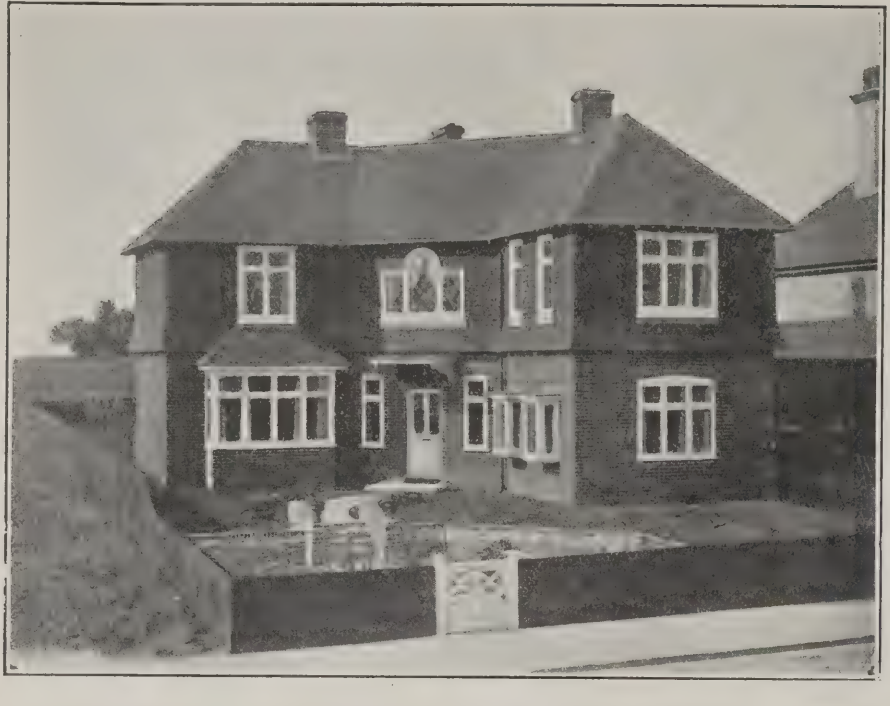
NORTH EASTERN RAILWAY CO'S. OFFICES LONDON

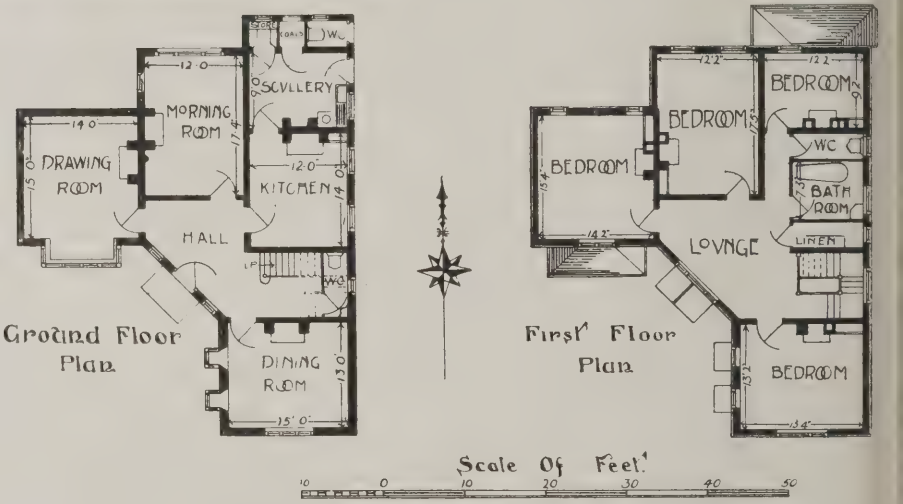
BOARD ROOM

DRAWN BY C. A. FAREY.

HOUSE AT TANKERTON-ON-SEA, KENT.

The accompanying views and plan illustrate a small country house which ha recently been erected at Tankerton-o Sea, Kent. The site permitted of a unobstructed southerly aspect, and to us this to the best advantage an extende form of front elevation was designe thereby producing a rather unusual an interesting plan. The facing material were local red brickwork up to the firs floor level, with weather hanging an roof in manganese sand-faced tiles. feature of interest in the south elevatio is the circular-headed window over th entrance door, which lends itself admi ably to the lead glazing employed gene ally. Internally a feature has bee made of the oak staircase, and of th lounge on the first floor to which thi gives access. The lines of the plan pe mitted of a certain amount of formality i the treatment of the garden, and this lend an additional point of interest to th design. The work was carried out fro the plans and under the direction of M Robert H. Goodsall, the contractor bein Mr. Fred Lawson, of Whitstable, Kent.





HOUSE AT TANKERTON-ON-SEA, KENT. ROBERT H. GOODSALL, ARCHITECT.

HALL AND STAIRS.

ANOTHER "ESCALATOR."

It would appear that the escalator or moving staircase is an innovation acceptable to the travelling public, and now it is stated that the escalator is to play an important part in the development of the Tube railways at Charing Cross. The District Railway are building an extension to the Charing Cross Railway Station, and the scheme includes the cutting of a tunnel from the present terminus of the Hampstead Railway in the Strand, through the Embankment Gardens out beneath the river to a new station which will be connected by an escalator with the present District station on the Embankment. The latter will be brought into touch with the "Bakerloo" station by another moving staircase. The Hampstead trains will thus run round a loop which will be about half a mile in extent. There will be a short underground passage way about 350 ft. long between the new Embankment station of this railway and the "Bakerloo" Tube, and the present tunnel between the Bakerloo and the District will be superseded. It is expected that the work will take two years to complete. A similar improvement which has just been decided upon will link up Paddington (G.W. Railway) with the Edgware Road Undergrounds. An escalator will also connect the Great Western Railway terminus and a proposed new "Bakerloo" station.

A WATER SUPPLY DIFFICULTY.

At a meeting of the Conway Rural District Council last week a letter was read from a firm of architects referring to the decision of the Council not to approve of the plans of two bungalows near the Rhos-on-Sea golf links, Penrhyn Bay, unless the owners of the houses connect up the water mains thereto. They wrote: "We have experienced and submitted to some very strange and peculiar matters in connection with the various authorities in North Wales, but this latest is the limit. We beg to point out that the duty of providing the water supply rests with your Council, and unless they carry out the obligation we shall have to lay the facts before the Local Government Board, and unless they pass the plans an application will be made for a mandamus and for damages caused by the delay. It is very good of you to tell us that the Council's water mains are within 350 yards of the site of one of the houses, but that does not concern us. It is the Council's duty to extend the main along the old road on which the site of one of the houses abuts." The Chairman commented "that is a cheeky letter, but still if they are within their rights we must consider it." The Clerk said it was the duty of the authority to see that every occupied dwelling-house that was within a reasonable distance of an available supply of water was supplied with water for domestic purposes. It was a question of the definition of a "reasonable distance." In this case the water main was 350 yards distant. The Council could not object to approve of the plans if they complied with the by-laws. But if the houses were built and not provided with a supply of water the Council could decline to give a certificate authorising them to be occupied. The plans were approved, and the Clerk was directed to give notice to the architects that a certificate of fitness for habitation would not be given until a water supply was provided.

MR. THOS. H. MAWSON ON "LANDSCAPE ARCHITECTURE."

At the fifth meeting of the session of ie Gloucestershire Architectural Association, which was held at the Northgate ansions, Gloucester, on September 28th, ie President (Mr. Walter B. Wood) in ie chair, a large number of members nd friends were present to hear a lecture n "Landscape Architecture" by Mr. hos. H. Mawson, Hon.A.R.I.B.A.

In the course of his lecture, Mr. Mawon expressed the opinion that we had st that fine sense of spacious planning hich had given to us modern Edinurgh, and so many London squares. or will the travelled man or woman eny, he said, that whilst we were becomg less spacious in our ways and more ivial in our planning, more individualtic and less communistic in our archicture, other countries had developed a earer perception of what constituted ie highest development of the art.

He ventured to offer an explanation of ie disparity between our own conditions nd those which obtain abroad. It was mply this: In England, when a man quires wealth he seeks the country and ie distractions of sport. Abroad, as a an acquires education, he draws nearer ie heart of the city, where he finds art, usic, literature, and those other refreshents of the mind which are necessary to is intellectual life. The student of ndscape architecture finds that the ealthy Englishman and the educated reigner both demand beautiful surroundgs. The Englishman has his country at, fine gardens, and expansive domain herein to take his pleasure. Abroad, the an who seeks the city combines with hers to create an environment of beautiil parks and gardens, but these are for ie use of all, and are free to all.

As usually understood, the expression landscape architecture," he said, conires up to the mind a slight and partial ifusion of colour, neatness, and prettiess, into the domain of nature or the irroundings of our homes. Whether iese scenes are romantic or commonace, they convey no more to the mind ian artificial improvements, devoid of onstructive beauty. The successful ndscape architect, however, must not ily be able to build up in his mind's re the whole of the buildings, roads, irks, gardens, ornaments and utilitarian ojects into one harmonious comprehenve scheme, of which he is able to preidge the effect, but he must also have at intimate practical knowledge which ill ensure his giving full effect to his eam. To do this successfully, he has ot only to study architecture in the ound, but he must also have a keen opreciation of natural objects and features, and possess the power to weave e natural and the artificial together ithout discord. This is, no doubt, generly conceded to the art in its relation domestic architecture; and very few chitects would nowadays undertake the esign of a country domain without conilting the man who has schooled himlf in these larger problems of landscape id garden composition. To this extent may be said that the art is recognised England. How does it stand in relaon to town development? Surely this where the landscape architect is absotely essential.

The lecturer pointed out that in merica the profession of landscape architecture is far more highly developed than is the case here; and it was his opinion, from his acquaintance with America and Canada, that the profession of landscape architecture is gaining, and must continue to gain, in public appreciation in both those countries.

To avoid a misunderstanding, the lecturer would draw a distinction between garden design, whether called "garden architecture" or "landscape gardening," on the one hand, and "landscape architecture" as the term is understood in America. The first relates, for the most part, to the creation of those private gardens of which Englishmen have every reason to be proud; while the latter, though it includes the architecture of gardens, has most to do with works of a public character, and embraces the planning of cities.

So determined are the Americans to obtain the best that the world can show, that they send their professors on long visits to Europe to study classic examples of landscape architecture at first hand, and to collect whatever literature, ancient and modern, can be got together for the use of the students in their splendidly equipped schools.

In our own country, however, notwithstanding the excellent curriculum provided by the Liverpool School of Civic Design, which in many respects is unique, we are still awaiting adequate national facilities for studying the essentials of the art of landscape architecture as applied to civic betterment.

This suggested the question, What are the essentials of the art? And what is the equipment, theoretical and practical, necessary for its practice? First, it may be emphatically stated that the pupil must start with a liberal education, so that he may be able to exercise that catholicity of taste, power of concentration, love of orderly progression and logical sequence, which can only be gained by imbibing the classical spirit. On this foundation must be built a knowledge and a sympathetic interest in all the various branches of architecture, so that the landscape architect may be able to work harmoniously with the specialist in each branch of the profession, whether domestic, ecclesiastical, commercial, municipal, or otherwise.

He will be studious to design parks and gardens, and to control natural reserves and park systems, in a way that accords perfectly with their surroundings —that is to say, his design is not to be in any sense of the word disjointed, as most of our English civic parks seem to be. Further, he must be to some considerable extent an earnest student of sociology, of engineering and architecture, of botany, horticulture, and arboriculture; which things, broadly speaking, are all incorporated in the full conception of town planning, and which, in the American mind, are all connoted in the term landscape architect.

He must previously have had an expert training in surveying in all its branches, including the modern rapid methods of tacheometrical contouring, and he must understand the geologic and other influences which give rise to varying local conditions, while, of course, he must be acquainted with the formation and characteristics of the various soils to be encountered. The Liverpool School of Civic Design takes account also of such data as the legal aspects of town planning (seeing that we are more bound by precedent than the newer countries); but, broadly speaking, apart from minor national or local differences, we are endeavouring to work in accordance with the larger conception of the subject which has hitherto distinguished foreign countries from our own.

But the work of the landscape architect in city development is not so much the design and erection of units, as the control and composition of extended areas, and the harmonising of a multiplicity of features, natural and artificial; the first differing in scale and bulk from year to year, and the second constant and abiding. There must be sound comprehension of probabilitis in the case of the less stable factors, so as to make at all periods in their development a stately or picturesque whole.

Again, while, in other branches of architecture, a study of linear perspective, so far as it relates to the portrayal of individual buildings or groups of buildings, is necessary, in landscape architecture the fully equipped practitioner must be able to make bird's-eye views of the whole city—not, indeed, with the architect's close attention to detail, but with the object of showing an imposing group of broad areas in mass. Even this does not exhaust the list of the more obvious essentials of this branch of the profession of architecture; for the student must also attain to an educated "sense of locality," which will enable him to grasp the practical and æsthetic possibilities of the site, to build up in his mind's eye a picture of the city to be, and, above all, to present his conceptions to others graphically and pictorially, in such a manner that they too may participate in his vision and become fired with his enthusiasm.

While the English architect too often imagines that what really matters is a knowledge of architecture such as is demanded under the examination scheme of the Royal Institute of British Architects, and that this is a sufficient training for the man who designs both cities and gardens; on the other hand, the professors of landscape architecture in America, with equal sincerity, hold that an expert knowledge of scientific surveying and contouring, botany, arboriculture, traffic problems, and a proficiency in draughtsmanship are sufficient for successful city planning, and they are therefore apt to neglect the study of architecture. In each case the outlook is too restricted.

This brief and very incomplete examination of the necessary equipment of the landscape architect will show that there is pressing need for the formation of some association, not necessarily composed entirely of professional men, for the study and promotion of landscape architecture. Assuming for the moment that we are agreed that a special training is necessary, and that the profession is of sufficient importance to warrant such a course, can we find a sufficient number of men willing to give up at least six years to academic studies, and have we the means of imparting the necessary training? To the last question Mr. Mawson would emphatically answer, Yes! But the lack of organization and coordination so characteristic of British methods does not make for effective collaboration in great projects. Yet this co-ordination and collaboration will be necessary if we are to frame any project on the lines sketched out, and if we are to utilize to the full the facilities that at present exist. Landscape architecture, in fact, covers the whole field of Civic Art, and therefore only those who are born idealists, and who possess great tenacity of purpose, can hope to gain a recognised position in it.

Of course, all admit that the profession is a delightful one, but what are the material prospects? To such a question no definite answer can be returned, but never was a call of service stronger or the need for missionary zeal more pressing. Even in this cathedral city of Gloucester, there is an obvious need for the awakening to civic consciousness—a realisation of "the value of your glorious possessions, and equally to the range of your opportunities of the need of pleasant boulevards and green spaces; of the possibilities of your river-banks."

Civic art is so utilitarian in its purpose as to be civic first and art afterwards; and yet to love our city we must make it lovely. This can only be done by awakening in the soul of the citizen that high desire for civic art which has so long lain dormant. This dormant pride can only be aroused by setting before the people a tangible vision of what their city is capable of becoming. The dream of what one's city should be, and may be, and even some day must be, will be a special inspiration to those professions of the fine art upon which the beauty of the city ultimately depends. It is the work of the landscape architect to present this dream in its most alluring form.

Mr. Mawson showed a number of extremely interesting lantern slides, among which were a fine series illustrating his scheme for the improvement of Bolton, and a charming set of photographs showing the laying out of large private gardens carried out by the lecturer.

A short discussion followed, and a hearty vote of thanks was accorded Mr. Mawson for his lecture.

NOTES AND NEWS.

The Wallace Memorial.

For the memorial to Sir William Wallace, the Scottish patriot, a site has now been selected at Elderslie, and it is hoped that the work of erection will be begun in the early spring. A design by Mr. John C. T. Murray, F.R.I.B.A., has been approved.

"Ceresit" Water-proofing Medium.

The use of the "Ceresit" water-proofing medium for concrete, stone, and brick buildings was successfully demonstrated last year at the Brussels Exhibition, where the highest award was secured. A similar success has been achieved at the Turin Exhibition this year, the grand prix there having been awarded to "Ceresit."

Master Painters' Convention.

At the recent annual convention of the National Association of Master Painters and Decorators, held at Derby, Mr. T. N. Richards (Chester) was chosen as the new president, and Messrs. A. Andrews (Beckenham), J. Brooks (Oldham), J. W. Bellerby (York), and R. J. Ellis (Chester) were elected as vice-presidents, Mr. T. Metcalfe (Darlington) withdrawing.

Essex County Architect Appointed.

Mr. Frank Whitmore, the Essex County Architect, has been reappointed to the same office, at a net salary of £800 a year, as from December 31st next, provided that he give his whole time to the services of the county, but that he be permitted to retain his present appointment as architect to the Chelmer and Blackwater Navigation Company. It was proposed that the office staff should consist of a chief assistant at £200 a year, rising to £250, a junior draughtsman at £130, rising to £150, and a typist at £50 a year, rising to £80, for the work of the Education Committee; and similar officers for the general county work at the same scale of salaries.

Glasgow Building Trade Depression.

Reviewing the Glasgow Dean of Guild Court recently, the Dean of Guild, Mr. Francis Henderson, said that great depression had marked the condition of the trades most closely connected with the work of the Court, and the immediate outlook seemed to give no indication of improvement. While during the past year the number of linings showed no material decrease, the valuations were less by £140,000 than in the preceding twelve months, and both as regards linings and valuation it was the lowest for the past twenty years.

Lectures on Illuminating Engineering.

A special course of twelve lectures on illuminating engineering is being delivered at Battersea Polytechnic, Battersea Park Road, S.W.; the first on Tuesday evenings at 7.30, commencing October 17th, and the last six on Fridays, at 7.30, commencing January 12th, 1912. The course will deal with all illuminants, including electric, gas, oil, and acetylene lighting, the effect of light on the eye, and the hygienic aspects of illumination, the measurement of light and illumination, etc. Practical problems, such as the lighting of schools, streets, factories, etc., will also be treated, and the lectures will be fully illustrated by lantern slides and demonstrations. The lecturers are Prof. J. T. Morris, M.I.E.E., Mr. J. G. Clark, Mr E Scott-Snell, Dr. W. J. Ettles, and Mr. J. S. Dow, B.Sc.

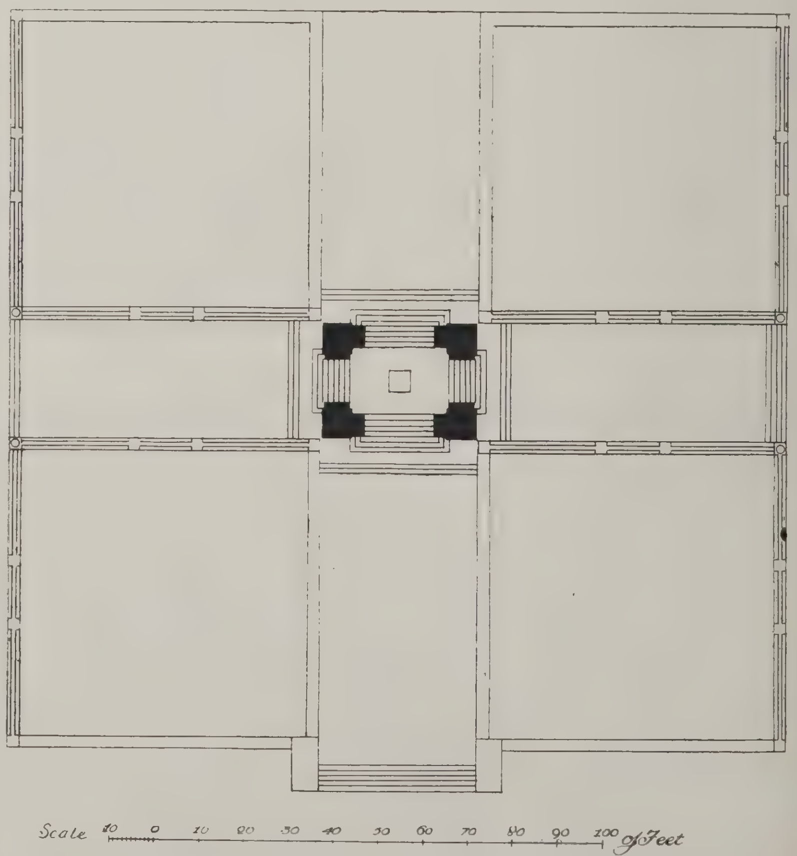
The Building Construction Company, Ltd.

Profits amounting to £14,306 were earned by the Building Construction Company, Ltd., during the year ended March 31st. A sum of £21,786 is available. The reserve has been raised by £10,000 to a total of £50,000, and £11,786 carried forward, compared with £8,066 brought in. Payment of a dividend is shelved pending rearrangement of working capital position. The company completed during the year the Royal Automobile Club, Pall Mall, and the Palladium, and is now at work on the Birmingham Council House extension, the Birmingham City Art Galleries, the London Opera House, for Mr. Hammerstein, the Calico Printers' Association's new buildings in Manchester, and new buildings in Paradise Street, Birmingham. The contract has also been secured for the extensive alterations to the Hotel Cecil.

OUR PLATE.

Rand Regiments' War Memorial, Johannesburg.

This memorial is to be erected in the Eckstein Park, Johannesburg, in memory of the men of the Rand Regiments who fell in the South African War. It consists of four intersected arches, the high arches emphasising the wide avenue and the smaller being across the shorter avenue. On the imposts it is proposed to carve the names of those to be commemorated. The memorial is to be surmounted by the figure of Peace, while surrounding it are four ponds, which will reflect the trees surrounding the monument, and the monument itself. Mr. Edwin L. Lutyens, F.R.I.B.A., is the architect. The drawing reproduced as the Centre Plate in this issue was exhibited at this year's Royal Academy.



THE RAND REGIMENTS' MEMORIAL, JOHANNESBURG.

PRINCIPLES OF WORKSHOP LIGHTING.

Hitherto a somewhat neglected subject, e lighting of interiors is now receiving n extraordinary amount of attention, ainly from experts who are able to speak om the fulness of knowledge acquired rough scientific training and practical xperience. Like architects, they have et to educate their public; for though, as Ir. William Manktelow says, in a valuble article on "Workshop Lighting" hich apears in the "Electrical Review" f October 6th, adequate and wellrranged lighting, by day and by night, is s hygienically essential as the provision f proper sanitation and ventilation, even -day this fact is imperfectly realised. Ir. Manktelow's article, which is illusated with diagrams, and contains some seful tabulated matter, should be read in s entirety by architects and others who re endeavouring to keep abreast of the bject; the following extracts representing ut a small portion of a long and comrehensive article.

The golden rule of factory and workop lighting, says Mr. Manktelow, must e to apply just enough light, of the right ind, in the right manner, and at miniun cost, and then to maintain the workg conditions at their initial level of fficiency.

The degree of accuracy required in odern manufacture calls for the provion of excellent illumination in all workops to enable its attainment, and, ough artificial lighting is normally reuired in factories only for a few hours er day (varying from two to six hours, ccording to trade and season), this mounts to 15.35 per cent. of the total orking hours (54.90 hours per week). nd, moreover, embraces mainly those ours in which the employees, tired by eir day's work, need more than ever the rovision of conditions favourable to fficient output.

As it is impossible to state definitely hat illumination is sufficient for various urposes, the following figures must be egarded merely as a useful guide, the nal decision in each particular case being irected by local conditions and circumances. By a very generally adopted conention, "bright" illumination means an lumination of more than 4 or 5 ft.-andles; "medium" illumination implies om 1 to 4 ft.-candles; and "low" or lim" illumination means less than 1 ft.-andle.

In well-lighted workshops, the natural lumination near the windows should cerinly not fall below 4 or 5 ft.-candles, hile by artificial light, for reasons dissed later, 1-1½ ft.-candles will usually ffice, and even ½ ft.-candle may be suffient in some cases.

In any lighting scheme employing illuination higher than 3 or 4 ft.-candles, ecial care is necessary in obtaining roper diffusion, particularly if the work andled is glossy or polished.

The modern single-storey factory, built the "bay" system and lighted by skyghts, is a comparatively simple subject the illuminating engineer; but in the der many-storeyed buildings, still so rgely in use (and likely to remain so ving to the costliness of the surrounding ound), great difficulty is usually expericed in obtaining access to every part of e shops for the daylight which is so sential to the health of the workers. It ould be remembered that no artificial ght possesses the full hygienic value of nlight. The latter is invaluable in opposing anæmic tendencies and in the extermination of bacteria of every kind.

In all cases, and particularly where the total natural illumination is small, it should be noted that a given area of "high angle" window space is enormously more useful than an equal area drawing its light from a patch of sky low down on the horizon. It is for this reason that glazed roofs give such powerful natural illumination, and it is for this reason that all wall windows should be carried as high as possible in the rooms which they illuminate.

Underground workshops may be "naturally" lighted to a certain extent by skylights set in embrasures at intervals round the walls, the lights being in the pavement or ground plane (this assumes that ordinary windows, facing into light "wells," cannot be employed). The skylights should be glazed with prismatic glass, and beneath them should be placed an inclined bank of glazed white tiles—which must, of course, be kept very clean.

In other instances of overground workshops, prevented from obtaining adequate natural illumination by the close proximity of other buildings, prismatic glass may be used in the windows. Whichever be employed—prismatic glass or reflecting mirror—great care must be taken that the incoming light does not distress operators at the neighbouring benches.

TRADE AND CRAFT.

Dobbins' Daylight Rods.

During the past few years a vast amount of attention has been concentrated on the problem of the efficient lighting of interiors by day. It had long been realised that even in a building advantageously situated in relation to its surroundings, the mere profusion of ample window-space, with the usual more or less futile accessories of blinds and curtains, is inadequate to the proper diffusion of light. Where the situation is bad, and the windows are overshadowed by adjacent structures, the essentially primitive system of simply letting in by means of windows such light as strays into the circumscribed area is fully revealed, and many devices have been adopted with the object of catching and economising the amount of light that is available. It is of course to the latter class of building that most attention has been given, the need in such cases being absolutely imperative. Mr. Edward John Dobbins, Victoria Mansions, Victoria Street, S.W., has invented, in his "Daylight Rods," a device for increasing, concentrating, diffusing, or modifying the daylight in buildings of all kinds. It is equally applicable to the confined warehouse or office and the ordinary dwelling, and it should be of particular value in schools, where effective but non-injurious lighting is of supreme importance. In a practically round solid glass bar there is a combination of shapes, and it is claimed that by a simple manipulation of the bar, these can be adjusted to meet any required conditions of lighting. In effect, they afford control of the daylight, diffusing, directing, increasing or diminishing it in accordance with particular circumstances and requirements, and concentrating it upon one particular spot or diffusing it throughout an apartment as may be devised. As the rods are usually arranged one above another across a window opening and flush with the building line, the device is quite unobtrusive; and it is, of course, equally applicable to other situations, as in skylights or pavement lights.

FEDERATION NEWS.

Yorkshire Federation.

The monthly meeting of the Executive Council was held in the Council Chamber, Town Hall, Bridlington, on September 15th, when Mr. A. J. Forsdike, president, occupied the chair, and 43 delegates were present from the affiliated associations.

Civic Welcome.—The ex-Mayor of Bridlington, Ald. G. C. Southcott, J.P., and Councillor Charlesworth, extended a civic welcome to the Federation.

The President called the attention of the Federation to the fact that Councillor W. Nicholson, of Leeds, a past president of the National and Yorkshire Federations, had been nominated for appointment as Lord Mayor of Leeds for the ensuing year, and it was resolved to tender him the sincere congratulations of the Federation.

The Federation heard with great regret of the serious illness of Ald. W. Judge, and it was resolved to send a letter expressing the earnest hope of the Federation that he will soon be restored to health.

The Emergency Committee reported that they had given careful consideration to the unemployment proposals of the National Insurance Bill, in view of recent labour troubles. Having regard to the repeated and unqualified statements of Labour Members that precedence should be given to the Unemployment Section, the Committee felt that Trade Unionists realise that its provisions would give them a distinct advantage and be a powerful weapon in the furtherance of trade disputes. It therefore recommended that a letter be sent to the President of the Board of Trade emphasizing the necessity of Government amendments being made to Section 63 of the National Insurance Bill to provide that benefits from the unemployment fund shall not be given to workmen directly affected by the strike or to those who strike in sympathy with such workmen.

The Committee was strongly of opinion that the efforts which are being made in many directions by trade agitators to secure the control of trade matters and to conduct negotiations with employers, even for trades in which they are not directly engaged or have no expert knowledge, is highly prejudicial to the highest interests of workmen themselves, and is seriously calculated to increase unemployment. The committee recommend that the Federation urge upon the President of the Board of Trade the desirability of delaying the consideration of the unemployment portion of the Bill until the Government has promoted legislation to make it obligatory that trade disputes shall be heard by the section of the trade directly concerned, or by Conciliation Boards composed of an equal number of employers and employees.

It was further suggested that the Government should take prompt action for the introduction of measures to prevent industrial troubles, with the consequential disastrous effects of unemployment, and that these should be antecedent to or be concurrent with the consideration of the employment portion of the Bill.

The recommendations of the Emergency Committee, and copy of letter to the President of the Board of Trade arising thereon were submitted, and consideration was given to correspondence from Members of Parliament with respect to the amendments suggested by the Federation. It was resolved to request the National Federation to formulate amendments which will give effect to the points raised by them and the Yorkshire Federation, before the President of the Board of Trade; and that when these are drafted that local associations be urgently requested to interview their local members of Parliament, with a view to securing their valued co-operation and active support, and that they be informed that the Federation secretary is willing to give assistance if so desired.

The Federation having considered the resolution adopted at the Trades Unions Congress in favour of such unions becoming approved societies to administer the benefits under the National Insurance Bill, it was resolved to urge the Chancellor of the Exchequer to consider the inexpediency and obvious disadvantages which would accrue, if one of the contributories to the scheme had the direct control of administration, and the likelihood of undue preference being given by fellow-workers, who, to maintain their official positions, might unwittingly be influenced in considering applications for benefits, and unduly extending same, with the contingent probability of increased contributions being necessary from the Treasury and employers.

With reference to the Trades Disputes Act, the Emergency Committee reported that it had carefully considered the ignoring of directly appointed trade officials in connection with recent trade disputes, and the conduct of trade negotiations by strike committees, who, by means of intimidation, have compelled workmen, often through fear of personal violence, to ignore conciliation arrangements, and institute new conditions, which, if continued, are calculated to lead to serious dislocation and loss of trade and commerce. It was resolved to call the attention of the Home Secretary to the direct encouragement to intimidation given to workmen by the preferential legislation of the Trade Disputes Act, by the legalisation of "peaceful picketing," and the immunity of union funds from the consequences of actions taken in pursuance of a so-called trade dispute. The committee therefore suggested the imperative necessity of sections 2-

and 4 of the Trade Disputes Act, 1906, being repealed; or in the alternative of legislation being introduced limiting the number of pickets, making them and their society responsible for acts of intimidation, and also making it a criminal offence, and subject to financial penalties, for any person or society to incite workmen to illegal acts in alleged furtherance of a trade dispute. The Committee also submitted that penalties should attach to persons using inflammatory language calculated to lead to illegal acts or to endanger life or property. The committee's proceedings were approved, and it was resolved that local associations be earnestly urged to approach their local members, and also write to the Home Secretary, in support of the Federation's action.

As to the Trade Unions Bill, the Emergency Committee reported that it had carefully considered the recent attitude of trades unions in industrial affairs, and the ease and facility with which society funds were obtained and utilised to further arbitrary demands and to recklessly ignore agreements and discipline. An opinion was expressed that the recent experience has made it more imperative than ever that the Government should adequately protect the minority members of a trade union, and specially conserve and maintain the full society rights of those who, in the exercise of their personal freedom and unfettered judgment, cannot see their way to support political or strike action; and, profiting by the experience of the Trade Disputes Act, the Committee recommended that the Government be earnestly urged to strenuously resist the clamorous demands of trade agitators for further preferential legislation, and to scrupulously maintain the strict impartiality of the law. The committee's recommendations were approved, and submitted to the local associations for active support and co-operation.

The utter disregard of the standard rate of wages and conditions of labour by small builders was carefully considered. The facility with which they can obtain the necessary workmen, often trade unionists, at low wages, in direct violation of the obligation placed upon federated employers to maintain the standard wages and observe the recognised conditions, was referred to. Careful consideration was given to the desirability of legislation being promoted whereby it shall be an offence, subject to penalties, for any employer to pay, or any workman to receive, remuneration for labour at rates less than those mutually agreed upon between the employers' associations and the operative societies in districts where these are formed, and working rules are established. The matter was referred to the local associations for careful consideration, and to submit their observations to the Federation at the earliest possible date.

Attention was drawn to the circular issued by the Local Government Board to all public authorities calling attention to the desirability of a fair wages clause being inserted in the contracts of all such authorities, and recommending, to secure uniformity, that the one approved by the Government should be generally adopted. It was resolved to request the Local Government Board to make provision in the Fair Trades Clause, in cases where an advance in wages becomes operative during progress of work under a contract, that the contractor shall be allowed the extra amount paid in wages over the standard rate current when tenders were invited and the estimates of cost made.

The Federation carefully considered the statements made from time to time in support of increase of wages, that the cost of living had materially increased during the past few years. It was suggested that these statements were of a very general character, and no evidence was adduced in support. It was considered expedient that some authentic statistics should be compiled, in order that the various branches of the Federation might be able to quote same as occasion arose. It was resolved to request the National Administrative Committee to take into careful consideration the general statements made at Conciliation meetings with respect to increased cost of living; and if possible to obtain at the very earliest opportunity authentic information from reliable sources and actual data in order that such statements might be controverted.

The Emergency Committee reported that they had requested local associations to take the lead poisoning matter into most careful consideration, and to favour the Federation with their observations not later than September 12th. Replies were read from the Bradford, Hull, Sheffield, and York Associations; but in order to give local associations a further opportunity of considering this important matter, it was decided to leave it over for consideration at the next meeting.

The proposed revision of Clauses 20 and 28 of the R.I.B.A. form of contract, and of the draft sub-contract form with specialists to be used in conjunction therewith, were carefully considered. Letters were read from the Hull and York Associations giving warm approval to the proposals. Further consideration was deferred until next meeting, to permit of replies being received from other associations.

A letter was read from Mr. A. G. Sherwell, M.P. for Huddersfield, and addressed to the Huddersfield Association, intimating that he had received a definite assurance from the Office of Works that priced schedules shall no longer be issued to clerks of works. Several of the other matters raised by the Federation are receiving careful consideration, and it is hoped that steps will be taken in respect of some of these in due course.

A letter was read from the National Secretary requesting the Federation to consider whether any steps can be taken (jointly with the Operative masons) to protect the masonry trade against the importation of work from lower paid districts (especially under the guise of provisional sums in quantities) by the adoption of a worked stone rule, on the lines of the Lancashire worked stone rule. The Huddersfield Association suggested that economy in freight was effected by working stone at its base, as carriage or waste material was thereby obviated, and that all masons in that district were paid the standard of wages.

The Leeds Association called the attention of the Federation to the steps which were being taken in Leeds by the operative societies to force non-unionists to become members of the societies. In some instances the appeals were made personally to the non-society workmen; but in one or two cases, notably by officials of the joiners' and bricklayers' societies, federated employers had been informed that if the non-unionists did not join the societies the unionists would cease work. Correspondence was read with Mr. Chandler, the secretary of the Amalgamated Society of Carpenters and Joiners and a joint secretary of the National Conciliation Board, as to the right of trade unionists to take this drastic action, and questioning whether they could cease work, unless and until the matter in dispute had been heard and determined by the Conciliation Boards. A letter was read from Mr. Chandler stating that, in the opinion of his executive council, the question of employment of non-unionists did not come within the scope of the Conciliation Agreement, and that as each employer of labour is the sole arbiter as to whom he employs, neither workmen generally, nor associated employers, have any power or authority to interfere with the free exercise of that right. It was resolved to refer the matter to the National Conciliation Board for an authoritative ruling on the decision of the Amalgamated Society of Carpenters and Joiners, and the action contemplated by other societies who were and are parties to the Conciliation Agreement.

A letter was read from the secretary of the Sheffield Association advising the Federation that the Amalgamated Joiners' Society had given six months' notice for advance in wages of 1d. per hour, to 10d.; reduction of hours from 49½ to 47 per week, and other minor alterations of rules. The matter was being considered by the Joiners' Committee, who would doubtless give counter-notice, which would be duly reported to the Federation. It was resolved that the Sheffield Association be given permission to deal with the notice, and informed that the Federation would give every assistance on any matter on which its advice is sought, or its intervention would be helpful.

Mr. Sinclair, on behalf of the Scarborough Association, invited the Federation to hold the next meeting in that town. The invitation was accepted, and the meeting fixed for Friday, October 20th.—J. Davidson, Secretary.

York Association.

At a general quarterly meeting held at the Old George Hotel, on September 12th, Dr. Robert Dent presiding, the question of specialist work, and also of admission of builders' labourers to the Conciliation Board, was considered, and was referred to the local Conciliation Board to be dealt with by them.

A report was given on the new working rules for operative plumbers which had been approved and passed

Consideration was given to the proposed alterations to Clauses 20 and 28 of the form of contract approved by the Royal Institute of British Architects, the Institute of Builders, and the National Federation of Builders. A proposed form of sub-contract applicable to specialist work was also considered in detail, and it was unanimously resolved: "That the proposed alterations to Clauses 20 and 28, and the proposed form of sub-contract applicable to specialists be approved."

After discussion of a letter from the National Secretary it was unanimously resolved that a letter be sent to the secretary that in the opinion of this Association, Government restrictions on the use of white lead of the nature indicated would be impossible to carry out, and that sooner than comply with such restrictions it would be preferable to discontinue the use of white lead. It was unanimously resolved that the following resolution should be forwarded to the secretary of the Yorkshire Federation: "That this meeting is of the unanimous opinion that recent industrial disputes have conclusively proved that the statutory power of picketing has been seriously abused, leading in many cases to unwarrantable interference with private individuals, and unlawful and wanton intimidation of workmen, culminating in fear of bodily injury coupled with actual damage to property; and this meeting is of the opinion that the Trades Disputes Act, 1906, should be removed from the statutes of this realm, or, in the alternative, that Sections 2 and 4 of the said Act should be repealed."

At an Executive meeting held at the Old George Hotel on September 19th, Councillor Hardgrave presiding, it was resolved to support the Yorkshire Federation in their request for resolutions to be forwarded to local members of Parliament, and to the Home Secretary in connection with the Trades Disputes Act. The serious feeling of unrest in the building trades evidenced by the attempts to force non-union men into the unions in Leeds and in Hull was considered. The probability which had been hinted at of the Union men ceasing to work with non-unionists was deprecated by the meeting as being contrary to the spirit the Conciliation rules.

An application was considered which had been r ceived on behalf of several of the carting co tractors in the City as to whether they could b admitted as a trade section of this associatio and, if so, on what terms. It was decided, aft discussion, that they be allowed to become ind vidual members of the Association on the sam terms and conditions as the other allied trades.—J. Hague, Solicitor, Secretary.

Cardiff Master Builders' Association.

The quarterly meeting of members was held a the association offices on September 21st, Mr. W T. Morgan (the president) in the chair.

Agreed Form of Contract.—Amended Clauses-Sub-contract Form: The secretary submitted thes forms, and stated that they had already been car fully considered by several members of the execu tive, who had returned same expressing approva and it was resolved that the forms be approved an that a copy be sent to each member of the associa tion.

Hauliers' Hours and Wages.—The secretary rea a letter from Mr. Ernest Bevin, local organiser o the hauliers, demanding 27s. per week for a 54-hou week, and requesting an appointment to discuss th demands on behalf of the men. It was resolve that we endeavour to arrange a conference with th principal firms of master hauliers in Cardiff to di cuss the matter fully before meeting the representa tives of the men.

Lead Poisoning Enquiry.—The secretary read circular letter from the general secretary, and i the course of the discussion which ensued, it wa elicited that no members of our association had ha any experience of any of their men being laid u through lead poisoning, and the secretary was i structed to send a report to that effect.

Labour Exchanges.—Use of Rooms for Meeting etc.—The secretary read a letter from the genera secretary, dated July 18, enclosing a copy of lette re use of labour exchanges by trade societies, wit which letter the members were in accord.—I. Watkins.

Cardiff and District Builders' Association

The quarterly meeting was held at 22, Castl Arcade Chambers, Cardiff, on September 29th, th vice-president (Mr. C. Hoare) in the chair.

Cavity Walls.—Mr. Hoare reported an intervie with the City Engineer, who stated that he had prepared a report which would be considered at th next meeting of the Public Works Committee, an which was really in favour of what we were seeking subject to a few modifications..

Rates and Rents.—The secretary read a lette from one of the members who suggested that, i view of the prospective increase in the rates, th rents of all houses controlled by our members, an let at an inclusive rental, should be increased. I was decided to allow the matter to remain in abeyance.

Municipal Elections.—The secretary read a lette from the Cardiff Chamber of Trade as to the desirability of bringing out independent candidates a the forthcoming municipal elections, with a vie of breaking down, if possible, the present system o conducting the elections under party politics. A resolution was unanimously passed that we heartil support the Chamber of Trade in its efforts to secure independent candidates for the City Council.

Hauliers' Hours and Wages.—The secretary reported that a demand had been received by the Cardiff Master Builders' Association on behalf of car men for 27s. per week for a 54 hour week, and the had invited our association to send representative to a joint meeting between themselves and the master hauliers to discuss the matter, and three representatives were appointed to attend the meetin

Recent Strike.—A resolution was unanimousl passed calling the attention of the Government t the violence and disorder occasioned during th recent strikes by the intimidation of willing worker under the guise of "peaceful picketing," and it wa resolved that same be forwarded to the Home Secretary.

The secretary read circular letter issued by th Incorporated Bristol Channel Timber Importers Association (Cardiff Section) giving notice of increased labour charges, to become operative a and from October 2nd. It was resolved that th Master Builders' Association be approached with view of sending a joint protest against the increase charges, and also a joint deputation, with a view o obtaining a reduction in same.—I. Watkins.

Variation in Tenders.

The Lambeth Council recently considered the tenders submitted for painting the cemetery railings. Forty peopl were anxious to do this work, but whils one offered to carry out the job for £105 another wanted £616. Three asked fo more than £500, and many gave figure above £200. Why the prices should thu differ is strange, inasmuch as there is a definite specification as to the paint to b used, whilst the Council has its own clerk of the works to see that the job is done properly.

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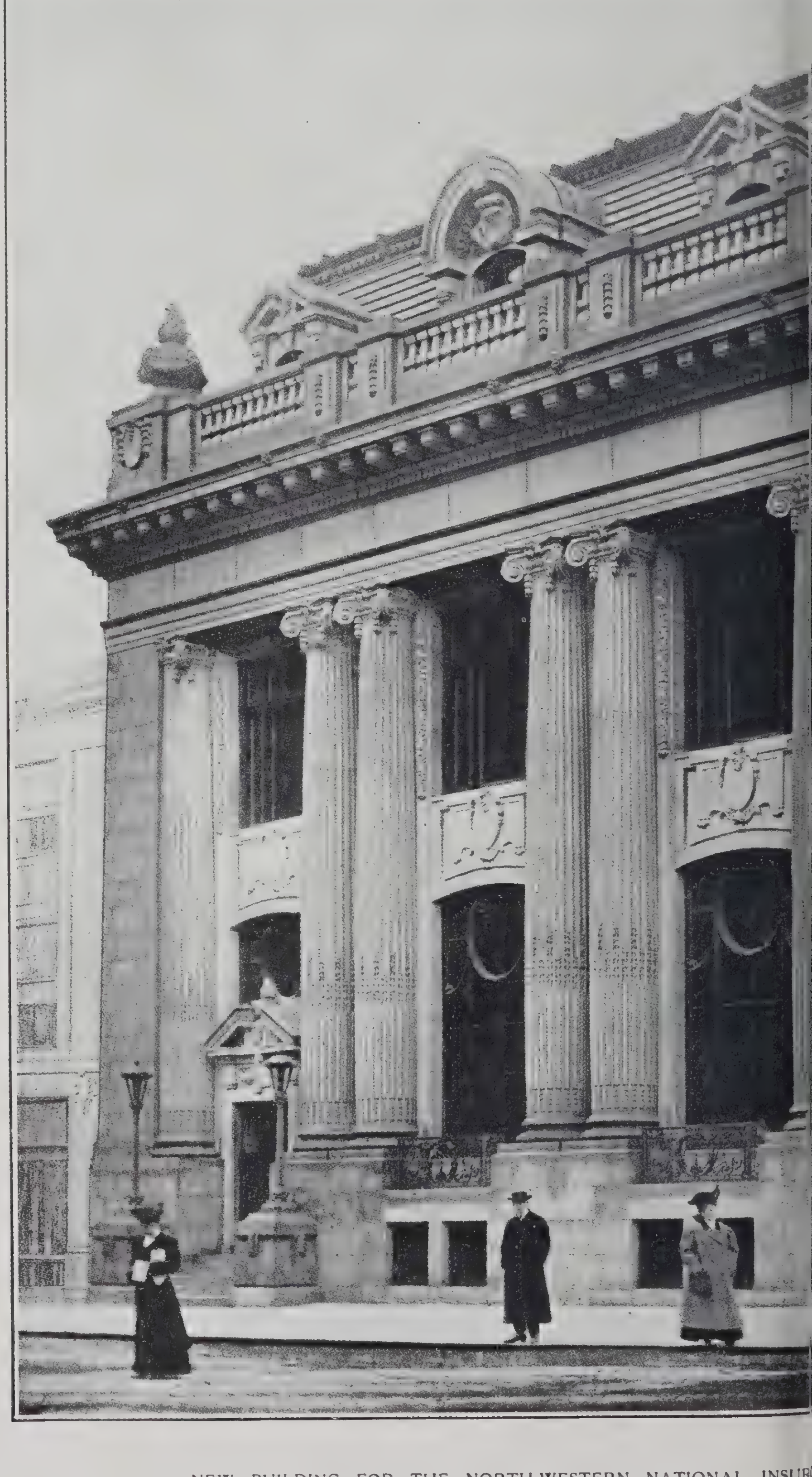
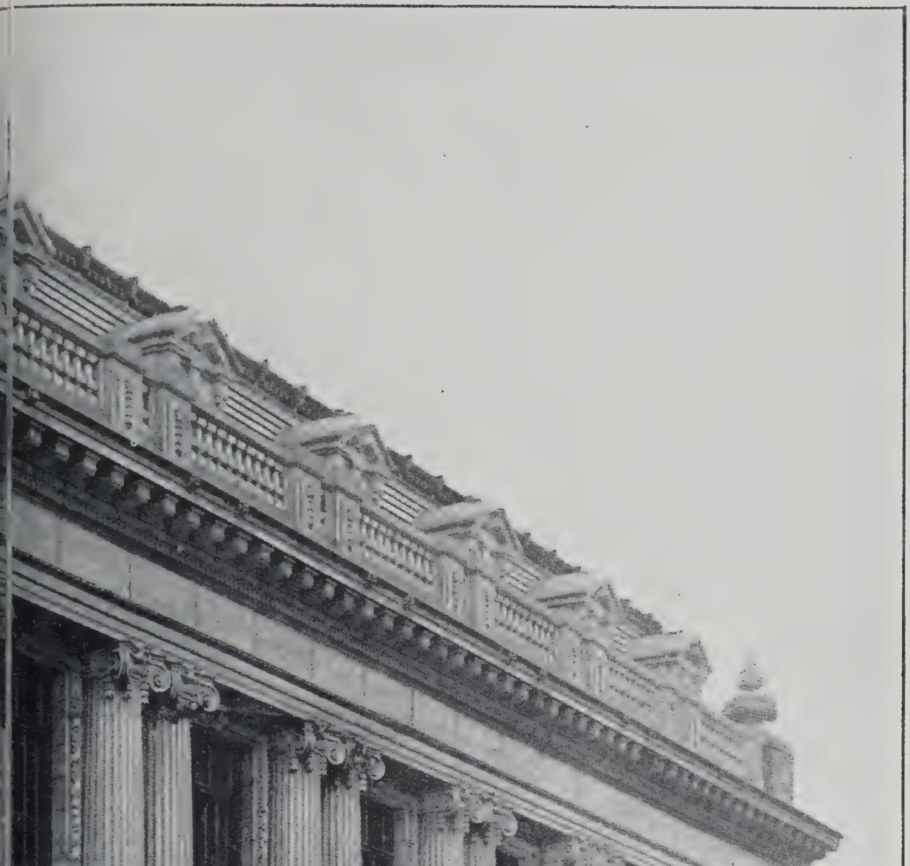


NEW BUILDING FOR THE NORTH-WESTERN NATIONAL INSUR



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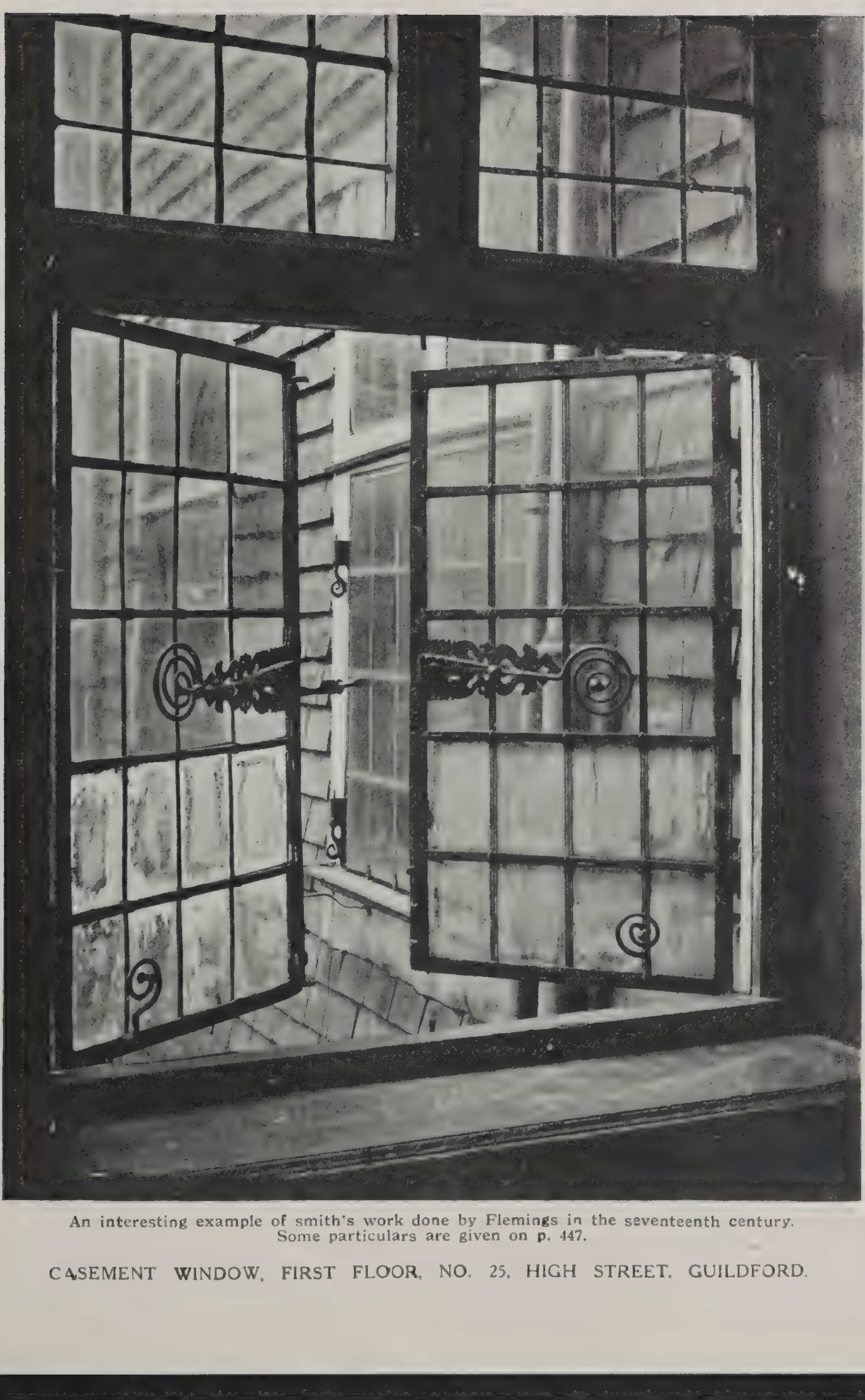
THE ARCHITECTS' & BUILDERS' JOURNAL.

WEDNESDAY,
OCTOBER 25th, 1911.

Volume XXXIV. No. 874.



An interesting example of smith's work done by Flemings in the seventeenth century.
Some particulars are given on p. 447.

CASEMENT WINDOW, FIRST FLOOR, NO. 25, HIGH STREET, GUILDFORD.

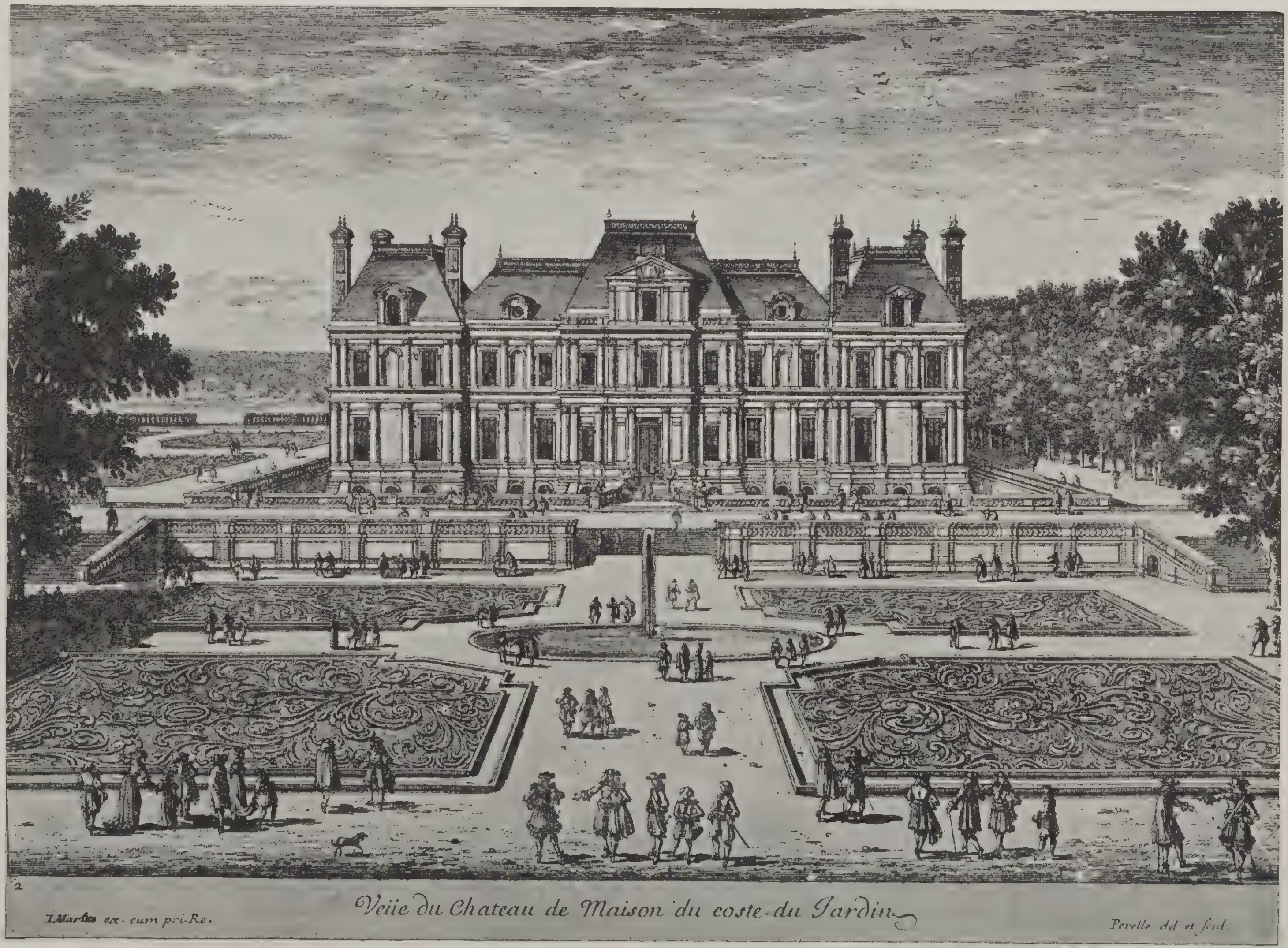

Vüe du Chateau de Maison du coste du Jardin
I.Mariette ex. cum pri.Re.
Perelle del et sculp.
2

FIG. 4. THE CHÂTEAU DE MAISONS, AS ORIGINALLY EXISTING. FRANCOIS MANSART, ARCHITECT.

(From "A History of French Architecture." By Professor Reginald Blomfield.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

OCTOBER 25th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 874

NOTE: The List of Contents will be found on page IV. of the front advertisements.

The Lessons of the French Renaissance.

THE appearance, almost simultaneously, of two important books on Renaissance architecture in France—that by Mr. W. H. Ward, which we reviewed four weeks ago, and that by Professor Blomfield,* which we have received since, is rather an unusual event in architectural literature. But the two oks do not clash with one another, each having its own parate value. Mr. Ward's book is history pure and simple, tending in point of time from the first beginning of French naissance down to its temporary extinction in the first half last century. Professor Blomfield's field of operations tends only from the reign of Charles VIII. to the death of azarin—in other words, from 1494 to 1661; and though ere is a great deal of historical research in the book, its m is quite as much critical as historical. And the history ich is included in it deals not so much with the obvious facts bodied in the succession of well-known buildings illustrat- g changes in style and manner, as with hidden details which y behind these; the real history of this and that architect d of the influence which they respectively exercised on the t; it is in fact more a history of the eminent architects of e period than of the buildings, and contains in this respect great deal of curious and out-of-the-way information, ucked out of its hiding-places by dint of a good deal of reful examination of documentary evidence not accessible in pular books.

But the most important point in the book, from the critical int of view, is just the fact that it stops where it does, and e reason implied for stopping there. It is because the author gards the real French Renaissance as coming to its full rength only after the series of more or less eminent architects nce the days of François I. had succeeded in building up a mplete architectural tradition. "All the labours of French tists, the crude efforts of the pioneers under François I., the thusiasm of Bullant and de l'Orme, the experiments and prices of Du Cerceau, the solid industry of De Brosse and emercier, the ability of Le Muet, the genius of François ansart, paved the way for the splendid achievements of rench architecture under Louis XIV., and in the eighteenth ntury." Mansart is the last architect dealt with and illus- ated in the book, as the man who had brought to perfection e weapons which his successors were to use. Up to that me the various eminent French architects (some of them, perhaps, more eminent than they ought to have been) had, in the uthor's view, been experimenting with Classical precedents ot altogether understood, and producing buildings which were ften picturesque at the cost of architectural logic and true lassic precedent. With Mansart commenced the reign of und and consistent Classic tradition. That is a perfectly mprehensible view to take of the subject, and to a great extent one may, in fact must, accept it as a reasonable one; but we are not sure that everyone will sympathise with a conclusion which would invite us to regard Perrault's dull correct east façade to the Louvre as superior to the delightful inconsequences of the interior courtyard. However, it may be replied that Perrault was not a favourable specimen of the complete architect of the French Renaissance; indeed, it seems somewhat doubtful whether he had had the training of an architect at all. But such is the charm of many of the buildings of the earlier French Renaissance, with their picturesque adaptation of Classic details to a quasi-Gothic distribution, that it is rather sad to be invited to regard them as mere preparations for the evolution of the more formal and logical architecture of Val de Grâce and the Sorbonne. The incomplete efforts of some of the architects under François I. and Henri II. have perhaps given—do still give—more happiness to the world than most things in the modern period of architecture. But no doubt they were inconsequent in detail, and the history of their struggles to make a new French architecture out of Italian materials which they only half understood is at all events an instructive one, and becomes all the more so in Professor Blomfield's well-written and well-reasoned pages. That is why we headed this article "Lessons of the French Renaissance." If one does not always want to learn the lesson, that is only a natural human infirmity, in which the boy is father to the man.

Under the heading "The Italians in France" the author begins by remarking that the study of architecture has suffered from excessive classification, a remark with which we concur entirely. While the architecture of Henri II. can be differentiated from that of François I., the point is to bear in mind that the latter grew almost imperceptibly out of the former, and that the two cannot be cut asunder as two separate chapters in architecture. That is the key to the object running through the whole book; to trace the development of French Renaissance up to the formation of a complete style. At the outset of the history things are in a state of confusion. Individual Italian artists seem to appear and disappear, having done one knows not very well what, but having been very likely more employed on sculpture and decoration than as architects. Primaticcio occupied a more important and lasting influence, though it is not implied that much of the work at Fontainebleau was actually done by Italians; "the majority of the names of the rank and file are French." No architect is mentioned at Fontainebleau till 1541, when Serlio was appointed as "peintre et architecteur," though there seems to be nothing to show what work, if any, he did at Fontainebleau; and there seems reason to think that François I. himself had as much to do with the general design of his palaces as anyone else. "The amateur was predominant," and architecture was looked upon as a matter of decoration, not of general comprehensive design. Then there were the men classified by the author as "the Master-Builders," the Chambiges and others, whose names occur constantly in the building accounts, but who were probably working masons and contractors rather than architects. St. Pierre, Caen, of which one Sohier is named as the architect, is illustrated as an example of the style of architecture produced by men whose notion of architecture was that of ubiquitous ornament, and we quite agree in the criticism of it. The author sums up:—

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*A History of French Architecture, from the Reign of Charles VIII. till the eath of Mazarin. By Reginald Blomfield, A.R.A., M.A., F.S.A. London: G. ell and Sons; 1911. 50s.

> "The evidence is on the whole conclusive that the practice of building in the earlier part of the sixteenth century still followed in the main the mediæval method; that is, the builder received somewhat minutely detailed instructions as to general plan and elevation, but was left to his own devices as to details of execution. . . . The results are seen in the absence of any ruling principle of architecture such as could convert this chaos of details into organic design."

Quite true, we suspect, as to the architecture here described. Only, was this really "the mediæval method"? That is surely begging a rather large question. There is organic design enough in the choir of Lincoln, for instance.

Even Professor Blomfield, however, can admit that there is no escaping the attraction of Chambord; "it may not be great architecture, but it has the sort of charm one would expect from the palace of the Marquis of Carabas." To our thinking it is one of the most remarkable buildings in the world; but you cannot define it; it is essentially Gothic in spirit, with "the new manner" in detail. There are many more logically designed buildings that one could more easily spare. But it no doubt represents a struggle between two incompatible styles. And it is observed, too, that there was no idea of effects in planning, or of the importance of an axis line, in the French châteaux. Compared with the best Italian palaces of the same period, they were in this respect, as the author says, "provincial architecture."

Then we come to the architects, commencing with Philibert de l'Orme, whom the author calls "the most interesting and original of that brilliant group of artists who appeared on the stage after the death of François I." He was a remarkable man both in his general force of character and his extensive practical knowledge of building construction, which may be said to be the root of the matter; perhaps hardly so remarkable as an artist. But he at least knew that architecture was something more than the application of ornament, as is plainly shown in his charming design for the Porte Chapelle at Compiègne (Fig. 1), which has every advantage from Professor Blomfield's beautiful drawing. And here was at las an architect who knew how to plan; his general plan for th Tuileries (never carried out as designed) is a splendid one and suggested Inigo Jones's plan for Whitehall Palace. Th elevation, with its large order of belted columns, and an immense and ill-proportioned attic above, cannot be called goo architecture, though the bird's-eye given in this book show no such hideous central pavilion as he is credited with i Fergusson's "History of Modern Architecture," on th authority of Mariette. Jean Bullant, almost exactly contemporary with De l'Orme, is a favourite with the author, wh seems to have rather decided personal feelings for or agains some of his architectural heroes; we should say he rathe exaggerates Bullant, of whose actual work, after all, littl survives; and if the Chapelle Funéraire at Anet (Fig. 2) i Bullant's, we cannot understand the admiration expressed fo it, except as to the lower portion, which is spoiled and crushe by the disproportionate and ugly mass of attic over it, wit its singularly ill-designed raking scrolls at each side. In hi chapter on "Lescot and Goujon" Professor Blomfield repeat the depreciatory estimate of Lescot which he gave som little time ago in a paper read at the Institute; suggesting tha Lescot was really a mere shadow of Goujon, to whom the rea merit of the work at the Louvre is due. Professor Blomfiel has gone so much into the records of the period that one canno but attach importance to his opinion on such a point; at th same time we must in this instance regard it as "not proven" it is only an opinion. The fact that Lescot always worke with Goujon is no proof that the latter was the real architect and one cannot help thinking that a man's contemporaries who regarded him as the architect of the work, were mor likely to have known than anyone can know four centurie after. Nor can we share the author's depreciatory estimat of the part of the Louvre attributed to Lescot. In all that i said in appreciation of Goujon (except in attributing to him Lescot's architecture), we entirely concur. He had th

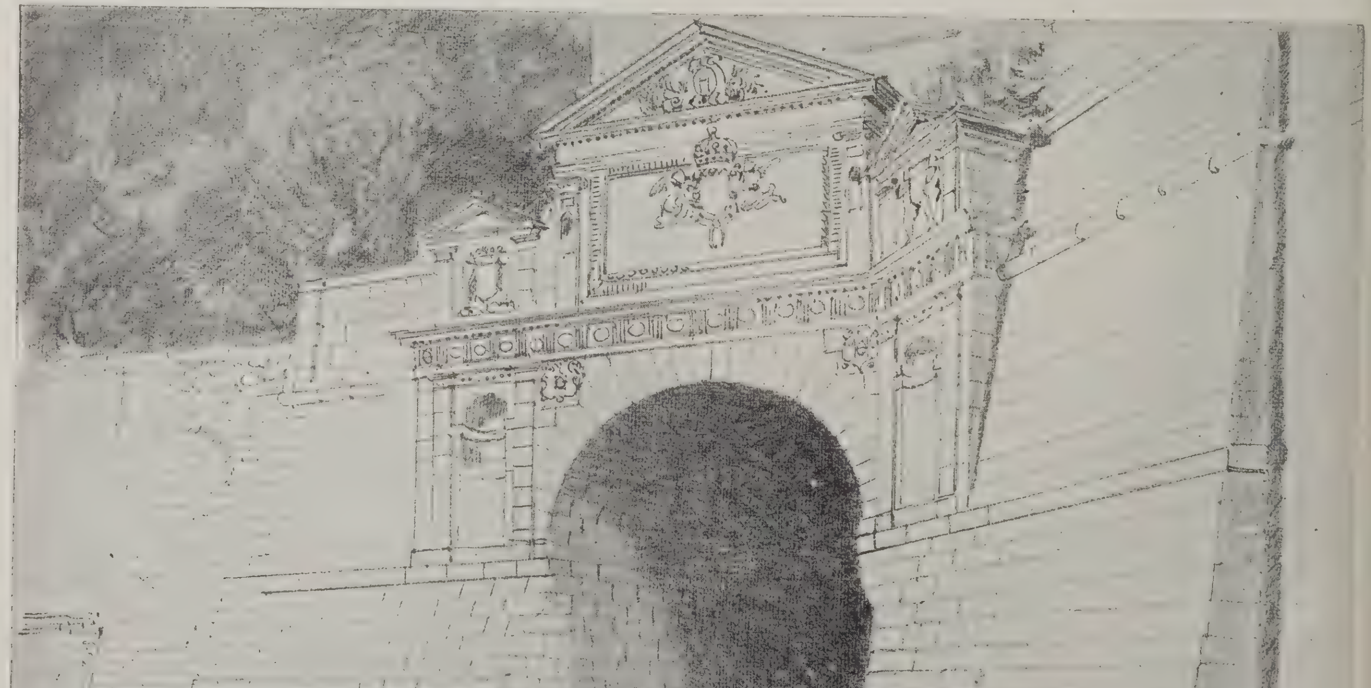
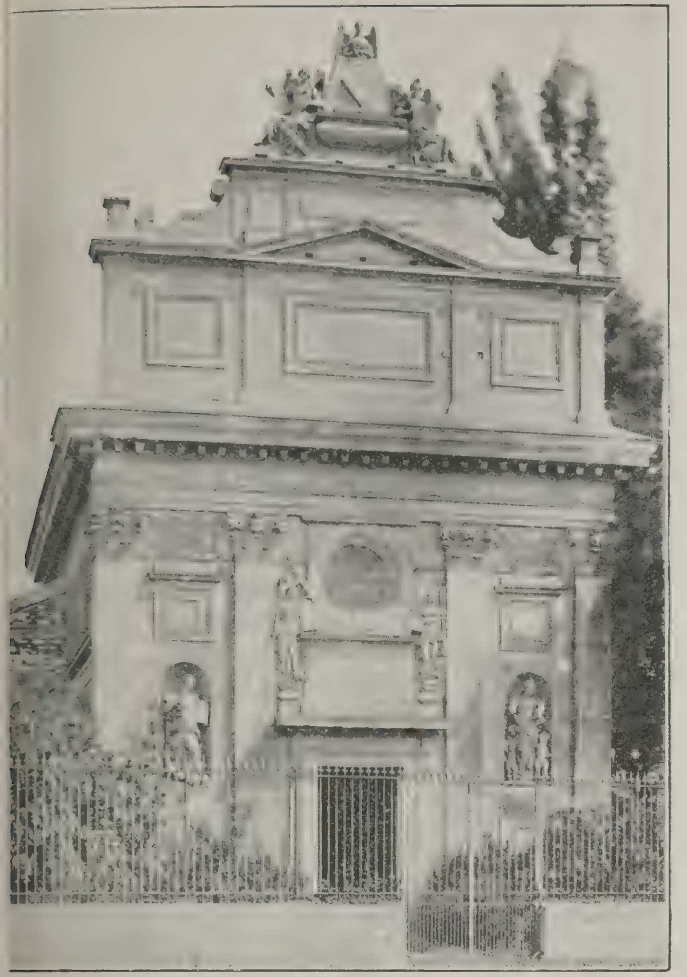


FIG. 1.—THE PORTE CHAPELLE, COMPIÈGNE. PHILIBERT DE L'ORME, ARCHITECT.



.2.—CHAPELLE FUNÉRAIRE, ANET. JEAN BULLANT, ARCHITECT.

incerity and feeling of a mediæval sculptor, with greater nowledge of form, and in the peculiar quality of his work he tands alone in the history of sculpture.

To Jacques Audrouet "du Cerceau" ("of the hoop," which as the sign above his studio), the author we think has meted ut precise justice. He was an ardent worker and illustrator f architecture without any genius, and some of his published esigns are detestable. A younger Jacques Audrouet du Cereau, the son of this one, is credited with the long south gallery f the Louvre, which is something far superior to anything with hich his father is credited. The whole of this, as the author otes, disappeared on the rebuilding of the river front by efuel under the Second Empire, but when he says that it an now only be studied in Marot's engraving, he seems to ave overlooked the fact that Percier and Fontaine, in the ortion of the north wing which they built under Napoléon I., xactly copied this design, as it can now be seen there.

The age of the early French Renaissance was one of the hâteau-building rather than of church building; it is noteorthy that Du Cerceau's book, "Les plus excellents bâtiments e France," is entirely occupied with plans and views of residential mansions; not a church figures among them. But so ar as churches were built, it is remarkable how the mediæval leal church, as a building with aisles, flying buttresses, and aults, maintained itself, with details derived from "the new anner." These quasi-Gothic churches with Classic detail are mong the most curious architectural productions of the period, nd it is natural that a chapter should be devoted to them. he west front of the church of St. Michael, Dijon, which orms one of the illustrations, presents exactly the general rdonnance of a mediæval west front, with its three large ortals and twin towers, with the gable of the nave between hem; the porches are nearly Gothic in feeling, only with round rches; the towers are carried out with a small Classic order n each storey; the buttresses capped with small pediments, and the lanterns with octagonal cupolas. It seems that although the new Classic detail had killed the Gothic, the mediæval conception as to the general form of a church still prevailed, with results that are odd, but interesting.

We must pass over somewhat lightly, for want of space, the remainder of the second volume, in which the works and the careers of De Brosse, Lemercier, Le Muet, and F. Mansart are dealt with. We may just notice that the author flings a sarcasm, in passing, at the much over-praised Pitti Palace *apropos* of comparisons between it and the Luxembourg, on which very admirable building he is rather half-hearted; but we agree that there is nothing in common between it and the Pitti except the rustication.

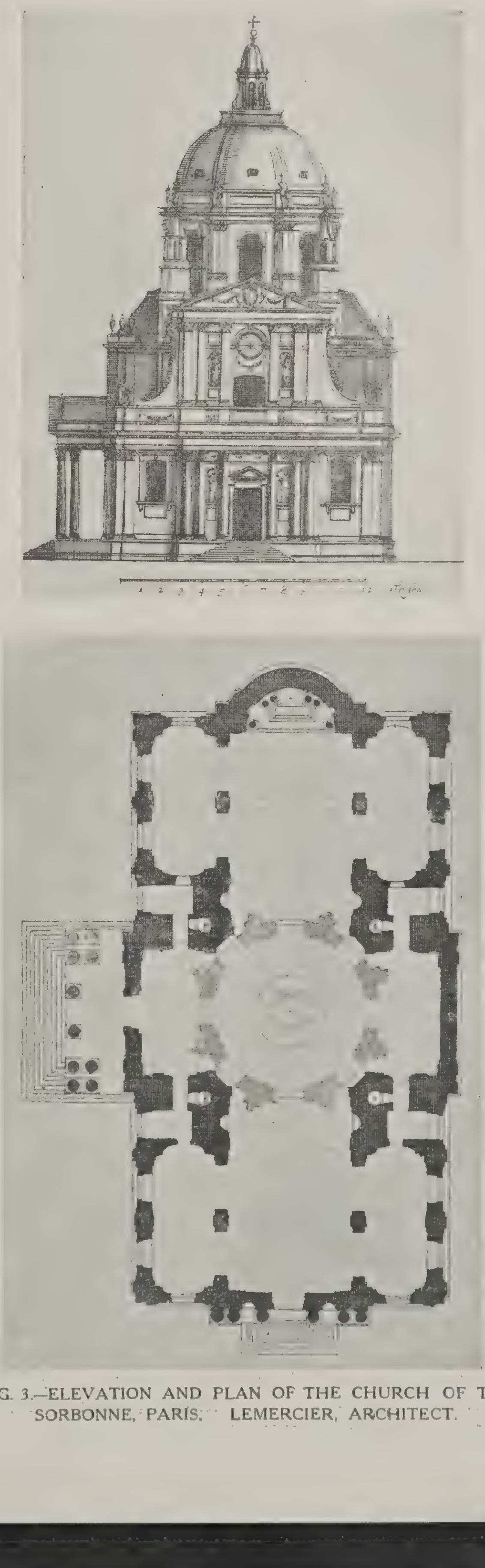


FIG. 3.—ELEVATION AND PLAN OF THE CHURCH OF THE SORBONNE, PARIS. LEMERCIER, ARCHITECT.

With Lemercier we come on the new ideal in church building, as represented in the church of the Sorbonne (Fig. 3), in which the mediæval church has at last been entirely forgotten. Here we find a building which is purely Italian in plan and conception, and one which, as the author observes, led on to the domes of the Val de Grâce and the Invalides, by Mansart and his great-nephew respectively.* The Château of Maisons (Fig. 4), now much altered and defaced, shows how far Mansart had progressed from the picturesque mingling of incongruous detail in the earlier châteaux, to the adoption of a completely coherent Italian style.

This symbolises the moral of Professor Blomfield's book. The habit of considering architecture merely as an affair of detail has, he says, cut at the very root of the art. "No such misapprehension would have been possible two hundred years ago. Architects might content themselves with ornament that had no symbolical meaning, and architectural features which had been used a hundred times before, but they seldom failed to study closely the part that the one and the other played in the general scheme, giving emphasis where necessary in the design, and accentuating the rhythm. They never lost sight of that unity of effect which is essential to architecture."

That is the lesson, and an excellent one in the main, even if we do not agree with all the steps in the argument. Professor Blomfield's book, as we said, is essentially a criticism rather than a history, and one that no one can study without benefit to his method of thinking about architecture. Both in a literary and in a critical sense it is a remarkable book, and has been produced by the publisher in a manner worthy of its importance. It is dedicated, we may mention, to Mr. R. Norman Shaw, R.A., "in admiration of his genius and example."

Engravings of Old London.

THE exhibition of engravings of Old London, in a corridor at the Guildhall, is not a very large one, but it contains much that is of interest. There is the old Covent Garden theatre with its Doric portico, a much more effective building than the present more pretentious structure. Those who have not been acquainted with the contents of the Crace collection will be interested in the views of old Hyde Park Corner with its rural-looking turnpike gate, and the old Mile-End turnpike, disfigured as this and one or two other drawings are by Rowlandson's brutal caricatures of his fellow men and women. A plan of the Guildhall neighbourhood in 1667 shows the Guildhall in a secluded square approached from Cheapside only by a very narrow alley; this has given place to the wider avenue of King Street in the plan dated 1706. A very curious scene, of a kind now entirely forgotten, is the engraving which shows the operations at a drawing for a State lottery, with an immense kind of paddlebox on each side of the room, where boys are turning handles to revolve the lottery wheel inside the machine, and handing out the tickets to two scrutineers as they drop out. There is a fine view of Somerset House in foreshortened perspective, showing its old appearance when its massive terrace architecture arose straight out of the water; a fine effect now lost to us.

Liverpool Cathedral.

THE correspondent of a Liverpool paper who signs himself "Interested" is mistaken when he says that we think "the appreciation of architectural beauty is incompatible with a lack of technical knowledge." We neither said nor thought so. What is wanted is not technical knowledge, but the study of architecture in such a manner as to educate the mind to a critical perception of the meaning an quality of architectural design. Very few of the amateur who write letters about their likes or dislikes in a newspape have ever given any thought to the subject at all. They hav been accustomed to think that certain forms to which they ar accustomed are right, without thinking of the reason; an when they come across something they are not used to they ar quite at sea, for they have never trained their minds to understand why design is good or bad; so they cut the matter shor by saying that what puzzles them must be ugly. There is n scientific proof possible that a thing is ugly or beautiful; it i a matter of trained perception, which few people take an trouble to acquire. "Interested" is not prepared to agre with us in thinking Westminster Cathedral a beautiful structure. We cannot prove to him that it is; but every architec know that it is; and American artists and critics, wh are not generally disposed to praise English architecture, ar enthusiastic about it. But the power to see that cannot b acquired without a degree of attention to and thought abou architecture which very few people in England ever troubl themselves to give; though, like "Interested," they are alway ready to give a positive opinion, or what they call an opinion on a subject they have never studied.

Labour Movement in the London Building Trade.

THE daily press is making the most of a movement fo revision of hours and wages which is gathering forc among the London operative builders. The agitatio was announced with such sensational headings a "Probable General Strike in the Spring," "Buildin Trouble," and the like. As usual, the matter hardly justifie the caption. There is at present no reason to apprehend strike in the spring, or any other event that can be terme "trouble" in the most disagreeable sense of the word. It i true that difficulties are likely to arise, but the daily press, i making the most of them, ignores the very efficient machiner for dealing with them that is in existence in the building trade The ground of the agitation is stated to be that whereas th wages at present current in the London trade were in mos cases agreed upon so long ago as September, 1905 (the agreement with the plasterers, however, dating from April, 1906 and that with the millsawyers from March, 1907), the cost o living has since increased (hence, presumably, a demand fo higher wages than the 10½d. and 11d. an hour now paid) while the percentage of unemployed being abnormally high, i is perhaps thought by the men that the adoption of shorte hours (at present fifty a week for thirty-nine weeks, and forty four for thirteen weeks) might afford some measure of relief But the men, while pointing to the length of time that ha elapsed since the agreements were signed, do not seem t realise quite clearly that the settlement was made upon building boom basis, and that it immediately preceded a perio of unexampled depression from which the trade has by n means emerged. At the moment, moreover, the industry i harassed by many circumstances that tend to render an increase in the cost of labour a prospect of most sinister significance. After the burdens imposed upon it by the Workmen' Compensation Act, and in view of the disastrous effects, eithe realised or anticipated, of the Government land laws and o the new insurance scheme, employers feel that a demand fo higher wages and shorter hours is the last straw. They woul rejoice to be in a position to give more money for less work but are convinced that, under present conditions, that way rui lies. Even supposing that the change were at the outset economically practicable, it could not have the effect intended o reducing the number of the unemployed, because the increase cost of labour would, by sending up the price of building automatically check the demand for it, and thus reduce th volume of work. It is strange that trade-unionists should b so prone as they are to shut their eyes to this very elementar law. There is another matter that should give them pause. The excess of unemployment is in great measure due to altered methods of construction, and to the employment of labour-saving devices and materials. A strike would be certain to give a further impetus in that direction; and just as the contumacy of the plasterers a few years ago resulted in the wholesale adoption of substitutes for their handiwork, so, it requires no great stretch of the imagination to suppose, certain other trades might find, to their undoing, that the work they had relinquished on striking could not be resumed to the same extent when the dispute was settled; the promoters of rival systems having in the meantime made the most of a great opportunity of obtaining a firm foothold. But if only a little tact is shown on both sides, the threatened calamity may be easily averted. With the machinery of conciliation working as smoothly as hitherto in the building industry, a reversion to the barbarism of industrial warfare is hardly likely to happen in London; where the organised employers are so well prepared for war as to be thus (if there is any truth in the proverbial injunction) in an excellent position to preserve the peace. Of course all things are possible; but on the whole there seem to be good grounds for confidence that the "probable general strike" in the spring does not come into the category of "intelligent anticipation."

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*Mansart was superseded by Lemercier shortly after the Val de Grâce church had been commenced, but his design seems to have been carried out. Mansart's dismissal was probably for some personal reason; he is said to have had a very difficult temper

Hospitals and Sanatoria.

THE Harveian oration delivered last week by Dr. Theodore Williams at the Royal College of Physicians, and reported at some length in several of the daily papers, contains a few observations that will be ead with considerable interest by architects who specialise in hospital work. The subject of the oration was "The Evolution nd Treatment of Consumption," and after recalling that the rue cause of the disease was not definitely shown until Robert Koch made his remarkable demonstration, Dr. Williams, who has personally studied the climates most advantageous for the treatment of consumption in the New and Old Worlds, gave a int as to suitable sites when he stated that the high-altitude oases yielded the most favourable results of all his statistics, nd, what is more important, the fewest relapses. He then oticed the establishment and spread of sanatoria all over the world, mentioning that in Germany alone the insurance societies now maintain over 16,000 beds for the working classes —a fact that was probably well ascertained by Mr. Lloyd George when he was drafting the section of his Insurance Bill in which provision is made for the establishment of sanatoria. Dr. Williams contends, however, that the pressing need is for more hospitals for consumption. England has taken the lead in establishing them; and now it is recognised that the consumption hospital is required as a centre from which to draft of cases suitable for sanatoria, as well as for the treatment and olation of more advanced and acute cases. He spoke also of "the blessed agencies of prevention," such as improved rainage, more cubic space and less overcrowding, more air nd sunlight, cleanliness of house and person, and increased pportunities for play and exercise, and how, mainly by these eans, the mortality from phthisis has been reduced two-thirds fifty years. Of all which reforms the architect may say ith becoming modesty, *Pars magna fui;* and that the claim ay be emphasised hereafter may be fairly inferred from Dr. illiams's remark that "a good town-planning scheme should ove a fine weapon in the hands of the combatants" who are termined that the White Scourge shall be finally stamped t. The task of further reducing and finally abolishing berculosis, he declared, was not a hopeless one, but it did t lie wholly with the doctors. It lay also with those who d it in their power to remove and lessen the principal uses of tuberculosis—namely, the overcrowding of our cities, e want of open spaces, of ventilation, the insanitary houses, d the lack of a good supply of water and of pure milk. . Williams's oration should give a further very considerable petus to a great movement that is as yet only in its beginnings, and should prove especially stimulating to the architect, the sanitarian, and the town-planner who may be neither or both.

Additions to University College, Exeter.

LORD FORTESCUE, as Lord Lieutenant of Devon, opened last Friday the buildings which have been added to the Royal Albert Memorial University College at Exeter. The additional buildings are the first instalment of an enlargement scheme approved by the Governors in 1904, but the commencement of which was delayed owing to certain difficulties which were subsequently overcome. The steady development of the college work has necessitated periodical enlargement of the building accommodation. The last extension, in 1899, was formally opened by his Royal Highness the Duke of York (now King George V.), and the previous extension in 1895 by the late Duke of Devonshire. The present addition has been erected on a site purchased at the rear of the main building of the Royal Albert Memorial, at a cost of £8,675 for land, and about £16,400 for the building. This occupies only about half the site acquired. It is intended, when the funds of the college permit, to utilise the remaining land for the erection of a college hall, and a building for the the technical department, which is now being partly conducted in temporary premises at some distance from the college. The new buildings, which are of brick and Portland stone, from designs by Messrs. Tait and Harvey, consist of two blocks—one for the University College, and the other for the Day Training College.

The Manchester Fiasco.

THE author or authors of the successful design for a new Art Gallery and Free Library at Manchester must be at present realising—without chagrin, we trust—the full force of the hackneyed truth that there is many a slip 'twixt cup and lip. From the announcement we made last week, it became apparent that the successful design has but a slender chance of materialising, since the site for which the building was destined is likely to be used for some other purpose. If that site is used for a Municipal Exchange building, or, as some seem to desire, as a public recreation ground or breathing space, the "fine, straightforward architectural monument, well adapted to the site, and worthy of its position as a central feature"—the description is that of the assessor, Professor Reginald Blomfield, A.R.A.—will be lost to the fickle-minded City of Manchester, and the author or authors must surely be numbered, in Shakespearian phrase, among "the fortunate unhappy." Supposing that, as seems to be probable, the design is not carried out, the Manchester City Council may no doubt be depended upon for adequate recognition of the rights of the author or authors; although it is clear that no amount of pecuniary compensation can atone for the heart-sickness which must be the inevitable consequence of high success fortuitously strangled at the instant of its birth. Of course the incident is not isolated. The fine projects that, for some reason or another, or for no tangible reason at all, have been incontinently abandoned, are sufficiently numerous and sufficiently distressing to suggest an architectural addendum to "The Calamities of Authors." By this time, however, architects must have been taught by the many and varied vicissitudes of competition to bear their disappointments philosophically, even when these take the peculiarly atrocious form of defeat at the moment of victory. In this particular competition no fewer than 223 designs were sent in, and the authors of most of these would in any case have been left to rather solemn reflections about the £12,500 which roughly represents the architect's fees on the £250,000 building that was projected; while the sufferings of the artistic few who regard honour and fame as of more importance than pelf would have been still more poignant. The waste of effort and of hope in the lottery of competitions is doubly deplorable when it is as complete and as extensive as it would appear to be in the Manchester competition.

PICTURE EXHIBITIONS.

Institute of Oil Painters.

As usual, this large collection contains a great deal of mediocre work, good enough up to a certain standard, but devoid of interest; and the exceptions are we fear rather fewer than usual. Mr. Kennington, who is not a commonplace painter, is rather wasting himself over such trivial subjects as his two small pictures; the life-size study of a girl of we know not what country, "The Balalaika," is brilliantly and forcibly painted. Mr. Russell Flint, in "The Hoop," has made an effective study after the manner of Mr. Anning Bell; and Mr. Dudley Hardy, in his group entitled "Bondage," has contrived to remind us a good deal of Fantin-Latour. Mr. Wetherbee's "Sand Dunes" is a small work in his best manner; "Hylas" is not one of his successes. A small and very sketchy study, "The Wharf," by Mr. Spenlove, shows a good deal of power of effect. Mr. Ollson's study of sea on "a golden afternoon" is rather remarkable in the endeavour to give the effect of sea water seen in warm but rather hazy sunlight; it looks odd at first sight, but may be true; and a bit of sea painting which is undoubtedly good is Mr. Norman Wilkinson's "Deep Water." Mr. Arthur Severn's "Misty Sunset" on the shore of the Italian Riviera is, as usual with him, a study of a special effect, not unsuccessful. Mr. Lavery contributes a study for the centre portion of his last Academy picture, "The Amazon," a capital example of a broadly painted life-size study. Mr. Louis Ginnett's "Ebony, Ivory, Rose, and Gold" is a clever composition including a carefully painted nude figure rather weak in drawing. It is rather a novelty to find Mr. John R. Reid, who has one or two good works in his usual style, appearing also as the painter of a couple of small nude studies. We are glad to see one or two landscapes by the late J. Aumonier; probably the last that will be seen of his work.

The Leicester Galleries.

At these galleries there are on view two small exhibitions of more than usual interest, since they are illustrations of two great poetic subjects by two artists of genius, Miss Fortescue-Brickdale and Mr. Rackham. The drawings of Mr. Rackham are illustrations of two sections of Wagner's Tetralogy—"Siegfried" and "Götterdämmerung." No one will be surprised to find the study of the dragon Fafner a masterpiece of what may be called the serious grotesque; and there is great beauty in at least two of the drawings which introduce us to Brünnhilde; one of them, "The Awakening of Brünnhilde," is a little disappointing. The wicked dwarfs, Alberich and Mime, are perhaps almost unnecessarily hideous, but Mr. Rackham never does these things by halves. The whole collection is full of clever drawings and weird fancy. Miss Fortescue-Brickdale's subject is Tennyson's "Idylls of the King," illustrated in a series of water-colour drawings. We must confess to a little disappointment with these; they do not seem to realise the personages to us. Judging by other finer works by the same lady, we should say that she is at her best when drawing entirely on her own imagination for her subjects, and not fettered by the necessity to follow and try to realise another person's conceptions. Neither her Launcelot nor her Guinevere appeals to us; and Modred listening at the door is merely a mischievous schoolboy. The best of the Idyll illustrations is perhaps that of the Queen seated between Enid and Vivien; there is both beauty and well-contrasted character in the three figures. The two drawings we liked best in the whole collection are two of the extra ones that have nothing to do with the Idylls—"The Bias," where Cupid joins in a game of bowls, and "The Aeroplane," a picture of a little child in the middle of a delightfully painted garden. The aeroplane, characteristically, does not appear in the picture at all; we only see the child wh looks up at it.

The Fine Art Society.

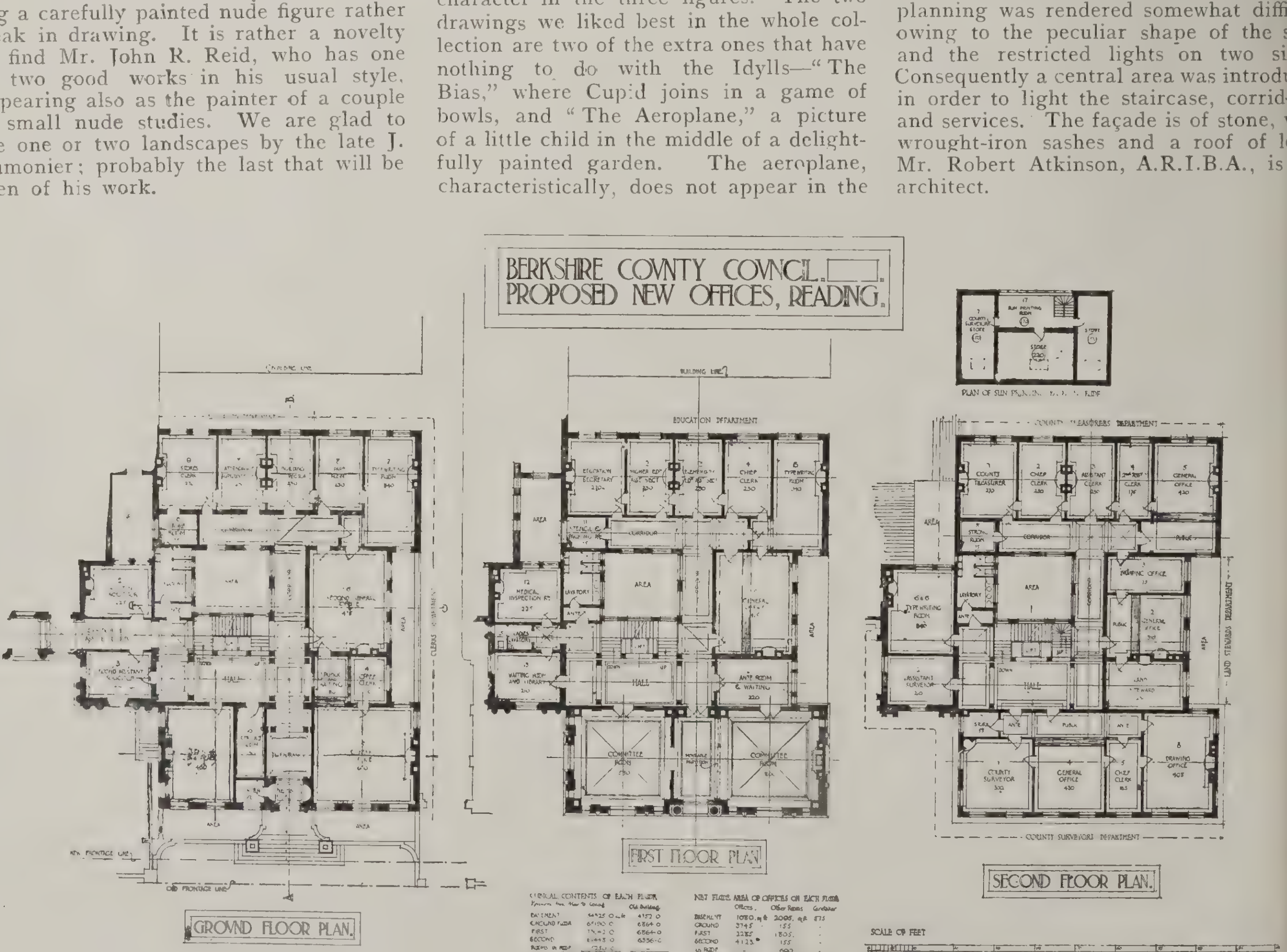
At this Society's gallery there is a co lection of paintings and drawings by "Th Modern Society of Portrait Painters" a very miscellaneous collection contain ing but few portraits; we understand th conditions were that each contributor wa to send one portrait and anything els that he pleased. In short, it seems to b an occasion to show that the Society coul do other things besides portraits. Th result speaks well, on the whole, for th amount of varied talent among its mem bers. Among the portraits the half-lengt of a girl under the title "Campden Hill, by Mr. T. M. Ronaldson, is a very charm ing study.

The Carfax Gallery.

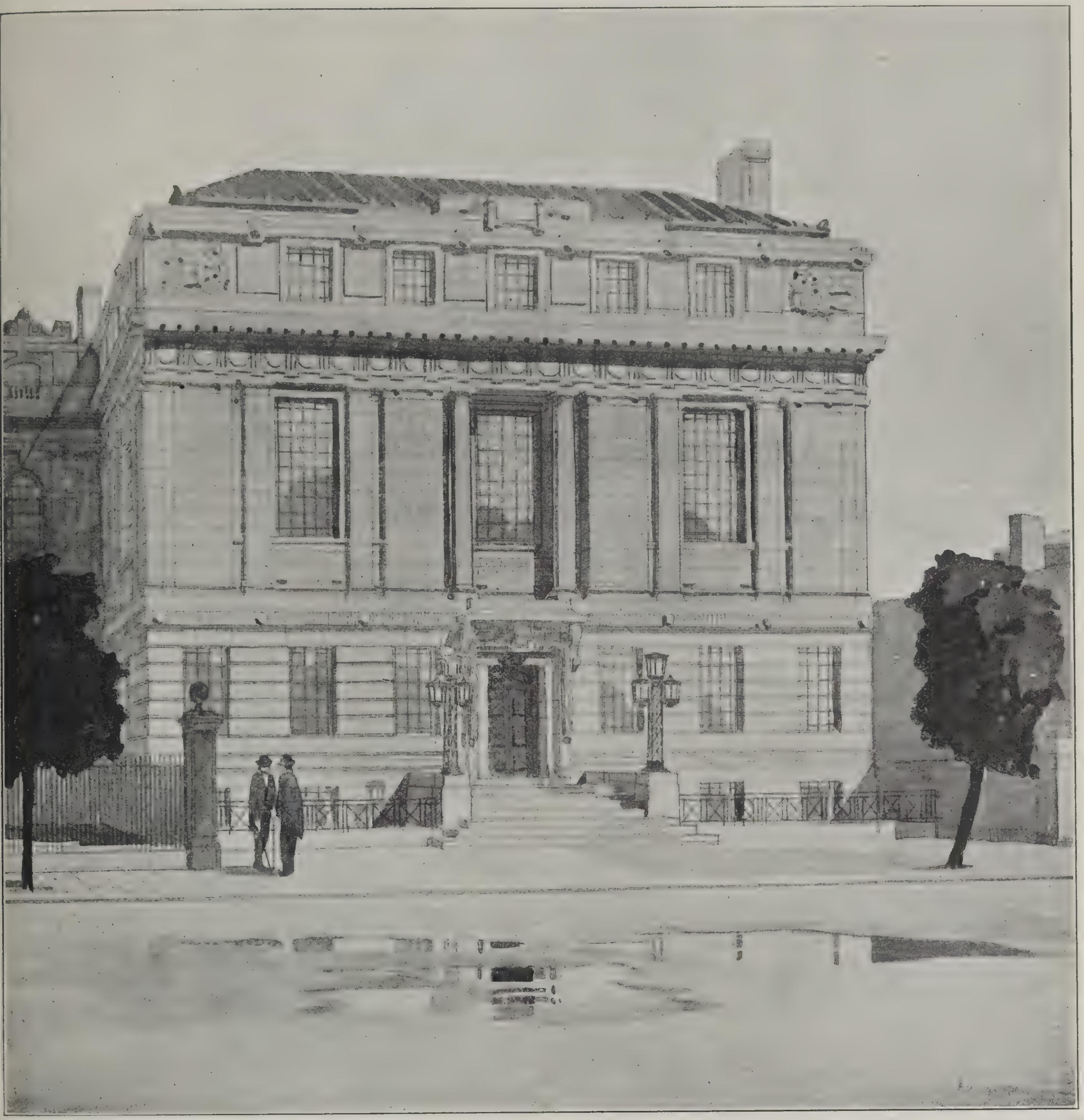
The water-colours by Mr. Douglas Fo Pitt and Mr. Walter Taylor, exhibited a this gallery, are for the most part mer sketches, often of the roughest kind, bu many of them very good and effective a broadly washed sketches. Mr. Pitt' "Fontainebleau" and Mr. Taylor's "Ware houses" are among the best, and show fine sense of pictorial effect and compos tion.

BERKSHIRE COUNTY COUNCIL OFFICES, READING.

The drawings here reproduced wer made in competition for a new counci office at Reading, adjoining the Assiz Courts; and with the exception of tw committee rooms on the first floor, were t be occupied solely as offices for the Clerl to the Council, County Surveyor, etc. Th planning was rendered somewhat difficu owing to the peculiar shape of the site and the restricted lights on two side Consequently a central area was introduce in order to light the staircase, corridors and services. The façade is of stone, wit wrought-iron sashes and a roof of lea Mr. Robert Atkinson, A.R.I.B.A., is th architect.



ROBERT ATKINSON, A.R.I.B.A., ARCHITECT.



DESIGN FOR NEW BUILDING FOR THE BERKSHIRE COUNTY COUNCIL, READING.
ROBERT ATKINSON, A.R.I.B.A., ARCHITECT.

EARLY ENGLISH MANTELPIECES.

An important and extremely interesting series of articles appearing in the "Times" under the title of "Studies in Furniture" includes some valuable notes on "English Mantelpieces," from which the following extracts are taken :—

No carved treatment on the stone in front of the chimney cloaking the flue was usual, says the "Times" writer, till the end of the fourteenth century, by which time, in common with other domestic innovations, the fireplace began to assume importance in the decoration of a room. Until that period the so-called great hall was the only ordinary living room; and this was provided with no fireplace in the wall, but an open hearthstone was set in the centre under an aperture constructed in the roof, and a heaped-up fire dispensed warmth that must have been mingled with a great deal of the smoke that did not escape. Even the great hall at Hampton Court, which was built by Henry VIII. after the fall of Wolsey, possesses no fireplace, and must have been heated in this manner. Another well-known example still in use is in the hall at Penshurst, the hearthstone and irons being in their original positions.

In the ruins of Dirleton Castle there exists an early fourteenth century fireplace with an opening of 6 ft. 2ins., bounded on either side with solid columnar jambs carrying corbels, in which two of the mouldings are dog-toothed; these corbels support a depressed arch and funnel-shaped hood 2 ft. 6 in. high, the entire mantelpiece measuring 8 ft. 4½ in. It is curious to find in Scotland so well a constructed piece of architecture of this early date connected with domestic comfort, and still more surprising to realise that the magnificent triple fireplace in the ruined Palace of Linlithgow—the birthplace of Mary Queen of Scots—is the finest specimen of its kind in the United Kingdom. This occupies nearly the entire width of the great hall, a room measuring 90 ft. by 30 ft.; the hood and mantelpiece are supported by four groups of clustered columns, which divide an immense hearth 21 ft. long into three openings, not partitioned off, so that a single fire or two or three could be lit, and the entire mass of stone would then have given out an immense heat. These columns, 6 ft. in height, support a long plain frieze, capped by a finely carved Gothic cornice intersected with brackets, which originally carried small statues; above this a tapering hood reaches nearly 8 ft. up the wall, making the mantelpiece construction in all 25 ft. wide by 15 ft. 6 in.—a truly royal proportion. This beautiful fireplace was built by James IV. soon after his marriage with Margaret Tudor, sister to Henry VIII., and rivals in its magnificence some of the great mantelpieces of France and Flanders; it was in all probability executed under French influence.

Another very fine example, also in the neighbourhood of Edinburgh, and of about the date 1470, exists in the hall at Borthwick Castle; here the funnel-shaped hood 14 ft. high terminates in a point, the jambs being formed of sturdy double columns one foot in diameter, with elaborately carved Gothic capitals supporting a plain mantel heading with a finely carved Gothic cornice, and the whole construction is again suggestive of French taste.

These hooded mantelpieces continued until late in the fifteenth century; but what is known as a Tudor-headed fireplace was certainly introduced into this country quite forty years before the Tudors obtained ascendency. The Tattershall Castle mantelpieces, recently the subject of much controversy, must have been erected between the years 1444 and 1452 by Ralph Cromwell, Lord Treasurer of England, and are the finest early examples of this style.

BUILDERS' FOREMEN'S PENSION FUND.

An Appeal for Funds.

As announced in our issue for last week, we are endeavouring to raise a substantial sum in aid of the Pension Fund of the Builders' Foremen's Association. The response, so far, has not been what we anticipated, and we are therefore all the more desirous of emphasising the excellence of the object for which funds are sought. While being fully aware of the burdens already imposed on employers and others connected with the building trade, we feel there is yet ample ground for an appeal such as we now make. Hence we again draw the attention of readers to this Pension Fund, in the hope that many additional donations will be forthcoming. All communications should be addressed to the Editor of the Architects' and Builders' Journal, Caxton House, Westminster.

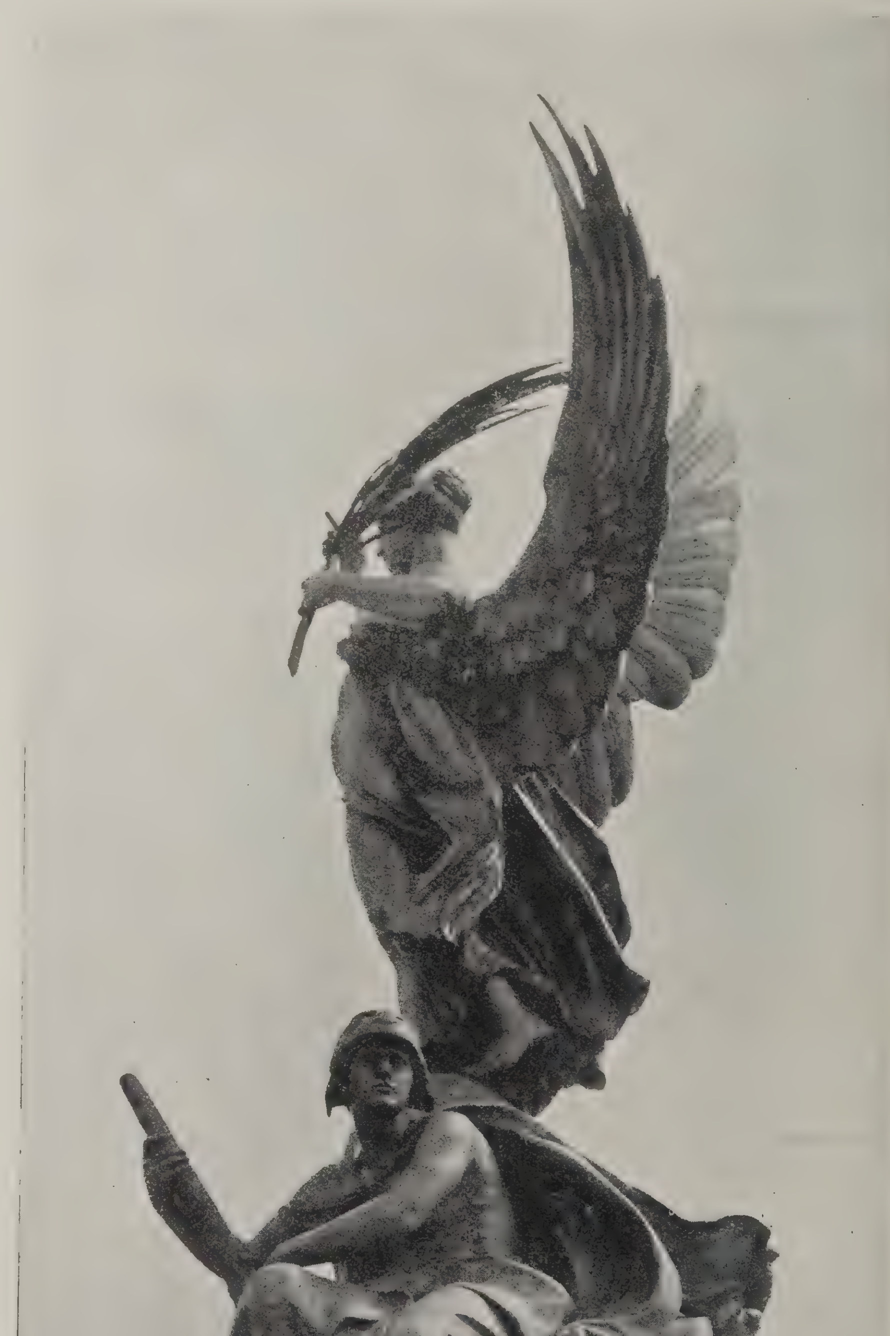
BUILDER AND BUILDING OWNER.

Judgment was given last week by Mr. Muir Mackenzie, Official Referee, in the case of Minter v. Waldstein. The plaintiff is the well-known builder, and the defendant is Professor or Art at Cambridge University, and employed the plaintiff to make extensive additions to his country mansion, Newton Hall, near Cambridge, under a building contract by which the price payable was to be £12,975. The work in question was completed at the end of last year, and the plaintiff claimed that there was a sum exceeding £3,000 due to him on certificates which the architect had given. The sums of money paid and claimed by the plaintiff amounted to £21,000 in all, of which Mr. Waldstein had already paid over £17,000.

Mr. Muir Mackenzie, in the course of his judgment, said the excess of the sum claimed over the contract price was accounted for by extra work and variations in the design of the building. These variations and alterations the plaintiff alleged were ordered either by the defendant or the architect. The defendant disputed his liability for the many claims, on the ground that the architect's certificates were invalid, having been given after his authority had been revoked, and further that in important particulars the plaintiff had not fulfilled his contract, and on this ground there was a counterclaim. The plaintiff replied that in every deviation as regards materials or design he had acted under the orders of the architect or persons deputed by the architect to superintend the work and give orders, and that he, the plaintiff, was not responsible for anything which had turned out unsatisfactory afterwards. Judgment was given as follows: On the claim and defence, for the plaintiff for £2,750. On the counterclaim, for the defendant, for £2,116 14s. On the plaintiff's counterclaim to the defendant's counterclaim for the plaintiff for £533. Execution on these judgments to be limited to execution for the plaintiff for the balance in his favour of £1,166 5s. 9d. The costs of the plaintiff's claim to be the plaintiff's. The defendant to be entitled to the cost of the counterclaim. As regards the issues on which either party had failed, he was not to have those costs. A stay of execution was granted upon the terms of the money due under the judgment being brought into Court.

A FIGURE OF VICTORY.

Upon this page we illustrate the figure representing Victory on Sir Thomas Brock's Queen Victoria Memorial in front of Buckingham Palace. The figure stands upon a sphere and rises above a superbase bearing the figures of Courage and Constancy (the former of which is shown in the illustration). The right arm of Victory is uplifted, while the left hand grasps a branch of palm leaves. About this crowning feature there is a fine sense of vigorous animation.



THE SUMMIT OF THE QUEEN VICTORIA MEMORIAL IN FRONT OF BUCKINGHAM PALACE: "VICTORY" WITH SUPPORTING FIGURE OF "COURAGE."

SIR THOMAS BROCK, R.A., SCULPTOR.

THE INTERNATIONAL ONGRESS OF ARCHITECTS, ROME.

The Society of Architects' official dele- te to the International Congress of chitects held at Rome during October Ir. R. G. Lovell, Member of the Council the Society) presented an interesting re- rt at the 27th annual general meeting the Society, which was held on October th.

On Tuesday, October 3rd, Mr. Lovell ended the inaugural ceremony of the nth International Congress of Archi- ts in the Hall of the Horatii and Curatii the Capitol, Rome. The Minister of iblic Instruction welcomed the delegates the name of the King of Italy, and Sir enry Tanner, as the delegate of the itish Government, responded on behalf his fellow-countrymen. Mr. Lovell ended the five sessions of the Congress the Congress Hall and offices adjoining Castle of S. Angelo, and from his luable report of the subjects discussed d the resolutions carried the following rticulars are condensed.

st Meeting, October 4th.

he Desirability of a Dictionary of Comparative Architectural Terminology.

This was made clear, and the compre- nsive nature of the proposed Inter- tional dictionary was demonstrated. e Congress resolved that the Perman- Committee should undertake this work, that the text should be supplemented illustrations; the following resolution ng carried: "The Congress recognised desirability of a dictionary of com- ative architectural terminology and olved that the permanent international nmittee of architects should organize an ernational commission who shall con- ue the work commenced and present its rk at the next International Congress. e Congress is of opinion that drawings sketches should accompany the text order to make the definitions clear."

isiderations as to Modern Architecture.

everal papers were read of widely ergent views; but the expressed and xpressed opinions of the members were varied and antagonistic that it was nd impossible to formulate any resolu-

ond Meeting, October 5th.

Technical and Artistic Education of the hitect and the Architect's Diploma. The rcise of his Profession beyond the limits of his own country.

onsiderable interest and excitement created during the discussion follow- the paper read by M. Albert Louvet thor of the Grand Palais des Beaux- s). M. Louvet's views were embodied ive resolutions; the first one being to effect "that the right to practise archi- ure should be free in all countries." s appeared to be entirely opposed to ideas of registration. Neither the er nor the resolutions had been printed translated, and the necessity of fol- ng the discussion in four languages le it very difficult for the bulk of the nbers to appreciate properly the im- ance of this proposal. Mr. Lovell was ported by Mr. W. E. Riley, the dele- of the London County Council, and nuously opposed any voting being n that day, until members had had pportunity of properly understanding resolutions. Although M. Louvet was ng to delete this first resolution, there a considerable number of members who insisted upon a vote being taken. The objection, however, was maintained by a small majority, and the contentious clause was struck out. It will be noted that this resolution did admit of another construction; namely, that an architect should be free to practise his profession beyond the limits of his own country; but the discussion was so involved and the wording so ambiguous that the British and American contingents considered that it was more prudent to adopt the course they took. During the whole of this very important discussion, which referred principally to the education of an architect, no reference whatever appears to have been made to the necessity of any form of commercial training! The Congress carried these resolutions: "(1) That the right to use the title of Architect should be reserved to those who have obtained it as a result of a proper examination passed after an artistic technical and scientific education. (2) That the title of Architect should be placed in the same rank as the titles of Master of Arts, Doctor of Medicine, etc. (3) That the schools of architecture may be varied in different countries, while adhering to the same general rules. (4) That students should not be able to enter schools of architecture until after having obtained in previous schools the same general culture or a similar culture to that which is required in the other professions."

Copyright.

The resolutions on this subject were passed practically without any discussion. They had been carefully formulated by M. Daumet, the President of the Permanent Committee; M. J. M. Poupinel, the Secretary-General; and M. Georges Harmand, Advocate and member of the Permanent Committee. The work already done in England appears entirely to cover these resolutions.

The Congress draws attention, on the one hand, to the resolutions on copyright made during the last 34 years at the International Congresses of Architects and also at the International Congresses of Literature and Art; notably at Madrid in 1904, at London in 1906 and at Vienna in 1908. The Congress draws attention, on the other hand, to the progress accomplished during the last 34 years in European legislation for the protection of architectural works, notably the Spanish law of 1879, the French law of 1902, the German law of 1907, and the convention of Berne 1886, and by the conference of Berlin in 1908; and the Congress also draws attention to the resolution made at the International Art Congress held in Rome in April, 1911, when uniform protection was declared legitimate for all works of art, including architecture, during the life of the author and at least for 50 years after his death. The Congress resolved: (1) That architectural work should be protected in all its artistic aspects. (2) That architectural designs, including the designs of exterior and interior façades, the plans, sections and elevations and the decorative details, constitute the first evidence of the thought of the architect and of the architectural work. (3) That the building is only a reproduction, on the ground, of the architectural design. The Congress confirms the resolution that architectural work and all the designs which compose it, together or separately, also the construction and all other reproductions, should in all international laws and conventions be protected during the life of the author and during a minimum period of at least 50 years after his death, in the same manner as all artistic work of painters, sculptors, and others.

Third Meeting, October 7th.

Reinforced Concrete.

Several interesting papers were read, including one by Mr. W. E. Riley, F.R.I.B.A., which was very well received, but it was felt that the study and development of this material from an æsthetic standpoint had not made sufficient progress, and it was decided that the Congress should record no vote on the subject.

Fourth Meeting, October 9th.

The Duties of the Architect with regard to his Employer.

Several papers on this subject were read, and a very heated discussion arose when it was urged that under certain conditions an architect should be permitted to accept payments from the builder. Mr. John Slater, B.A., F.R.I.B.A., made quite clear to the Congress the strong views existing in our country upon this point. There appeared, in other countries, to be a certain justification for this custom. For instance, it was shown that in Spain the responsibility for the stability of a building was fixed by law upon the builder, consequently it was usual in big buildings for him to employ an architect to protect his interests, while the property owner employed another architect who was usually responsible for the design and also for the foundations. The discussion brought to light so many varied views that the Congress only voted upon the main issue, namely: "That the architect should under no pretext receive fees except from his employer." The further study of this important question was referred to the Permanent Committee.

Foreign Academies in Rome.

Although the American, Spanish, and French delegates shortly described the work which their academies were doing (principally that of research), no announcement was made as to the great work for the establishment of a British Academy in Rome, it being considered prudent not to imperil the ultimate success of the enterprize by any premature disclosure.

Fifth Meeting, October 10th.

The Carrying Out of Architectural Work for the State or other Public Bodies.

This proved possibly more contentious than any of the other subjects. The matter had been exhaustively discussed, and a decision arrived at at the last International Congress in London. The London resolution was attacked, on the one hand, by those members who desired to have a distinction drawn between the architect and the engineer, and, on the other hand, by those who wished to have a distinction drawn between the official architect and the private architect. The bulk of the British members had considered it wiser to support the resolution of the London Congress, and to ask that no fresh vote should be taken, but, upon its being decided to take a vote, they felt free to follow their individual opinions, and most of them considered that "all public works of a monumental character should be open to public competition, and not be designed by the official architects." A great deal of confusion arose in framing the various resolutions and amendments and in properly translating into the four languages; consequently, in recording the various votes the resulting resolutions are somewhat involved, although they represent what the Society of Architects' delegate and the bulk of the British and Americans voted for. The official architects were naturally opposed to the last resolution, and, in the confusion, a protest was lodged with the President, objecting to this resolution, on behalf of the British members, the bulk of whom, however, no doubt approved of the resolution as it stands at present, namely: "That, with the object of obtaining monumental buildings embodying all the essentials of art, the schemes in all cases must be prepared by qualified architects; and before the work is put in hand the schemes must be submitted to the approbation of an institution such as the Academy des Beaux-Arts or to committees, as the majority of those members are architects."

Earthquake Commission.

The resolutions asking the Government of Italy to take the initiative in this matter were passed without any discussion.

Next International Conference.

It has been exhaustively discussed by the Permanent Commitee and decided that the next Conference should take place at St. Petersburg in 1914. A cordial welcome was promised by the Count de Suzor, the delegate from the Russian Government. It is suggested that the conference should take place in the winter, during the period of the high season at St. Petersburg. The general meeting of the Congress unanimously confirmed the decision of the Permanent Committee.

Conclusion.

It appears that only about 500 members and associates had inscribed, but no official list was forthcoming before Mr. Lovell left Rome. The British numbered about 70, and were apparently the most numerous, being closely followed in numbers by the Germans. It is said that many absentees were occasioned by the exaggerated reports of the seriousness of the plague in Italy, and in addition many Roman Catholics declined to attend a Congress held as part of a festival to celebrate the fiftieth anniversary of United Italy, and the abolition of the Papal temporal power.

It was evident on all sides, says Mr. Lovell, that our hosts and confrères, the Italian architects, did everything in their power to render our stay agreeable and entertaining. Possibly we Britishers were too exacting in requiring the Congress meetings to be of a more formal character. It was repeatedly stated that the London International Congress and the Town-Planning Congress were so excellently organised that it made it almost impossible for any other city to approach them. On the other hand, it was found that the generous hospitality of our hosts filled up every moment of the time to overflowing; and certainly there appeared to be more to be learnt outside than inside the Congress Hall. An interesting account of various visits is included in the report, and to these further reference will be made on a future occasion.

The excellent arrangement made for the comfort of the members by Mr. John W. Simpson, F.R.I.B.A., the Hon. Sec. of the British Section of the Permanent Committee, was greatly appreciated.

COMPETITIONS.

The Manchester Art Gallery Competition.

In view of the adoption by the City Council, as reported in this Journal last week, of Mr. Taylor's resolution, the Infirmary Site Committee of the Manchester Corporation cannot make any recommendation at present as regards the carrying out of the scheme for building a new Library and Art Gallery at Piccadilly.

The Special Committee add that inasmuch as such resolution excepts obligations which have been entered into, it is necessary to determine the successful architect in the competition which has taken place in order that his rights and the obligations of the Corporation may be determined. The Council were therefore invited for this purpose, and for no other, to approve the recommendation of the assessor and the Committee.

The successful firm is one of the following ten: Messrs. H. P. Adams and C. H. Holden, London; R. Atkinson, London; Bradshaw and Gass and A. J. Hope, Bolton; Cooper and Slater, Blackburn; Crouch, Butler, and Savage, Birmingham; R. F. Farrar, Leeds; A. G. Henderson and J. R. Hacking, Glasgow; F. W. Simon, Liverpool; Warwick and Hall, London; and T. Worthington and Sons, Manchester. These were the senders of the ten sets of plans chosen for final adjudication. As to which will be chosen the Council had not decided at the moment of writing. Reporting on the set of plans (No. 4) which has been finally recommended, the assessor, Mr. R. Blomfield, A.R.A., says: "The architectural character of the design generally is that of severe Classic, such as was practised in Manchester and Liverpool in the earlier part of the last century, and is, in m
opinion, eminently suitable for the pu
pose. Its details have been well co
sidered from a practical point of view, ar
the result is, in my opinion, a fin
straightforward architectural monumen
well adapted to the site, and worthy
its position as a central feature of Ma
chester." As the building is to cost abo
£250,000—that is the maximum figure—
the architects responsible for the plans ar
building would have received a reward
about £12,500 in commission, being at th
rate of 5 per cent. on the cost.

The municipality have been asked
take a vote of the ratepayers in order
ascertain how, in their opinion, the co
troversy should be settled. It appear
however, that this course would be *ult.*
vires, and the matter will have to
determined by the Corporation.

LIST OF COMPETITIONS OPEN.

OCTOBER 28. WORKHOUSE EXTENSIO
SALFORD. — Premiums £20 and £1
Limited to architects practising in Salfo
and district. Particulars from Board
Guardians, Salford.

OCTOBER 31. NEW TOWN HALL, MAR-
LEBONE.—Premiums, £100, £75, and £5
Assessor, Mr. Henry T. Hare, F.R.I.B..

NOVEMBER 30. TECHNICAL INSTITUT
CARDIFF.—The Cardiff Education Co
mittee invite architects to submit co
petitive designs and estimates for
technical institute to be erected in Catha
Park, Cardiff. Mr. J. S. Gibso
F.R.I.B.A., has been appointed assess
Full particulars may be obtained fro
John J. Jackson, Director of Educatio
Educational Offices, City Hall, Cardiff,
deposit of £2 2s.

NOVEMBER 30. HOSPITAL, HASTINGS.
The Joint Committee of the East Suss
Hospital and the King Edward V
Memorial Fund invite architects to su
mit competitive designs, etc., for the p
posed new hospital. Mr. Edwin T. Ha
F.R.I.B.A., of 54, Bedford Square, Lo
don, has been appointed assessor. Co
ditions and instructions may be obtain
from Mr. W. M. Rhodes, East Suss
Hospital, Hastings, on deposit of £1
Premiums of £125, £75, and £50
offered.

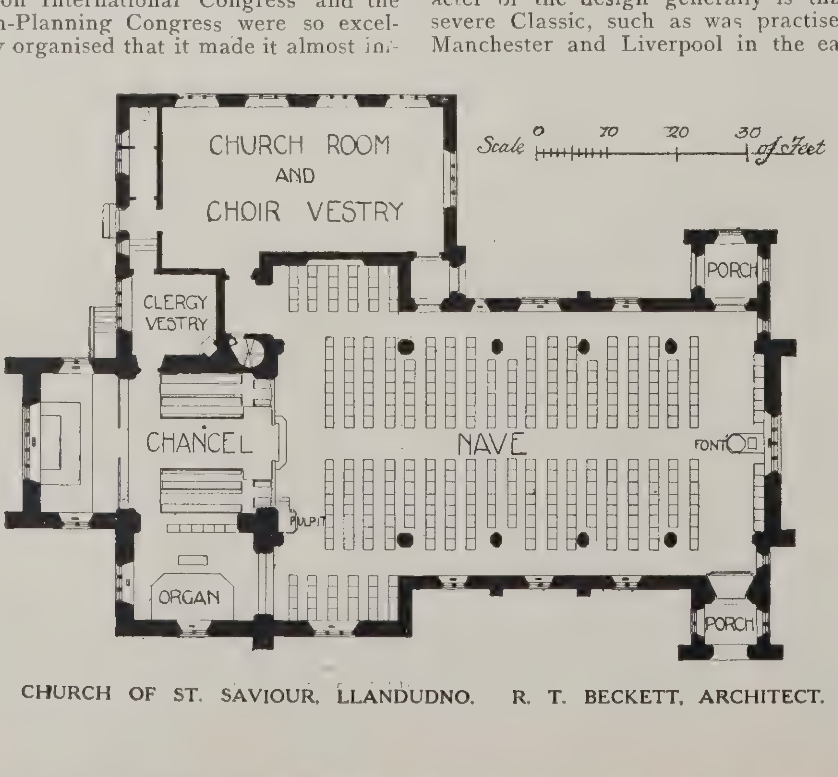
JANUARY 31, 1912. FEDERAL CAPIT
CITY, AUSTRALIA.—Competitive desig
are invited by the Commonwealth
Australia, for the laying-out of the Fede
Capital City. Premiums are offered
follows: 1st, £1,750; 2nd, £750; 3rd, £5
Conditions, together with particula
plans, and instructions, may be obtain
at the office of the High Commissioner
Australia, London. Designs must
delivered by January 31st, 1912, to Ki
O'Malley, Minister of State for Ho
Affairs, Commonwealth of Australia.

CHURCH OF ST. SAVIOUR, LLANDUDNO.

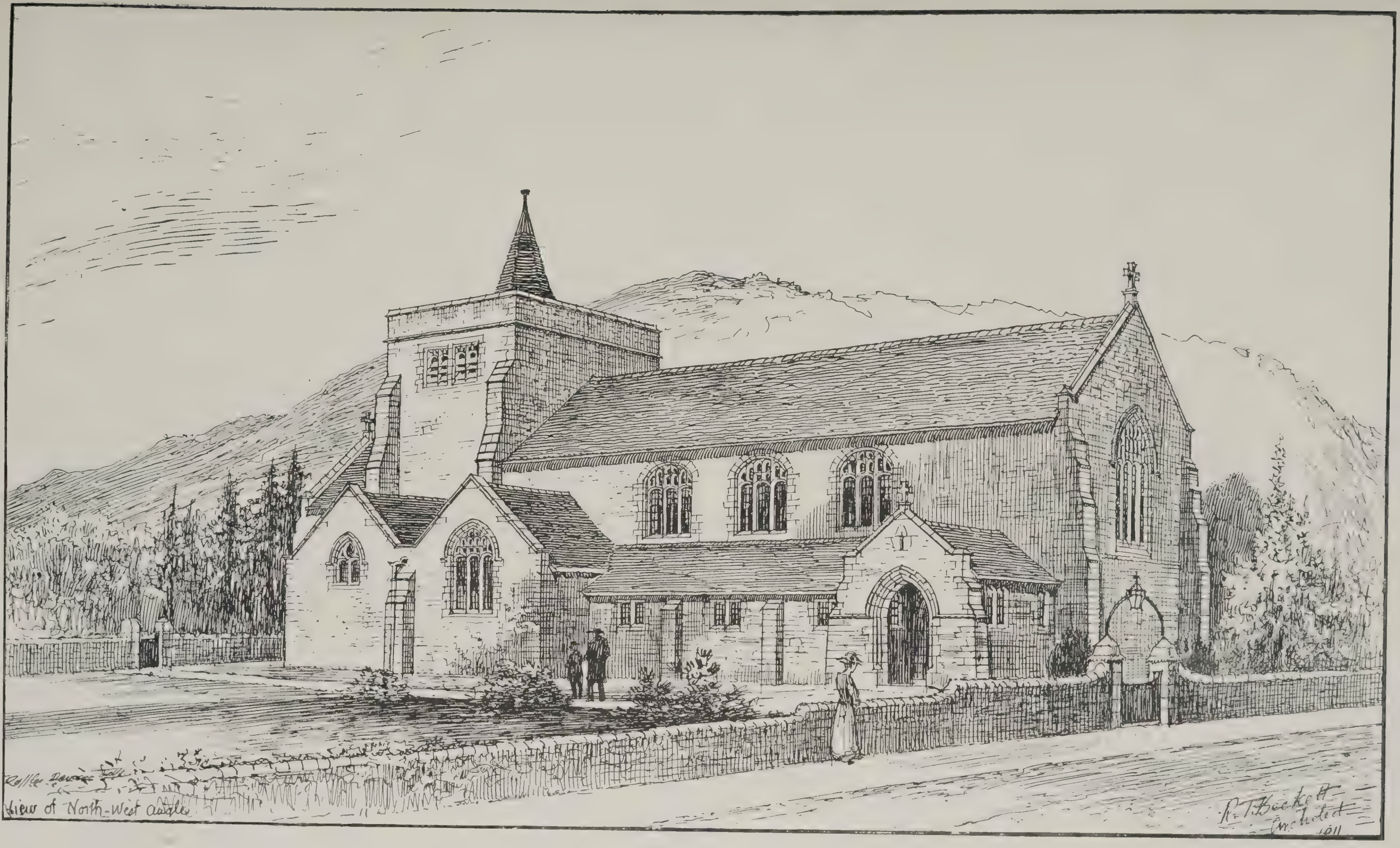
The first portion of this church is n
in course of erection on the sands that
Walrus and the Carpenter wept over,
being here that "Lewis Carroll" wande
about telling stories to his little frie
Alice Liddell. (He is said to have writ
"Alice in Wonderland" at Dean Lidde
house, close by.)

The church is faced inside and out w
Runcorn stone. The floor will be laid w
wood blocks and the roof covered w
Festiniog slates.

Mr. Peter Edwards, of Dudleston, n
Chester, is the builder, and Mr. R.
Beckett, of Chester, the architect.



CHURCH OF ST. SAVIOUR, LLANDUDNO. R. T. BECKETT, ARCHITECT.



CHURCH OF ST. SAVIOUR, LLANDUDNO. R. T. BECKETT, ARCHITECT.

(Royal Academy Exhibition, 1911.)

TOWN PLANNING—FORMAL OR IRREGULAR ?

DISCUSSION AT THE ARCHITECTURAL ASSOCIATION.

Mr. Raymond Unwin's paper on the above subject, read before the Architectural Association on the 16th inst., and reported in our last issue, was followed by an interesting discussion. Mr. S. C. Ramsey, having pronounced in favour of formalism, referred to Regent Street as a successful example of planning, with its approaching hill and curved road running up to Oxford Street, and having Piccadilly Circus for its change of axis. There were, continued the speaker, roughly three distinct types of town plans: First, those on regular lines, such as Washington, by L'Enfant; modern Edinburgh, largely by Playfair; and the colonial cities of Rome and Athens; secondly, those that had grown fitfully and unsymmetrically; and thirdly, those which combined the regular and the irregular, most modern towns coming under this head, as, for instance, London, Glasgow, and others. In the narrow streets of mediæval towns the rich profusion of lines was an accidental rather than a studied beauty. Concluding, the speaker deplored the unrestrained expression of individualism so apparent in Kingsway, and urged the learning of the real lesson of studied as against informal design.

Mr. Curtis Green referred to the Institute essay upon this subject, in 1910, by the late Mr. Maryon Watson. We had got to realise, he said, that in the movement there was something more than the mere creation of formal architecture.

Mr. G. H. Jenkins observed that as the distance between town and country increased there was usually a gradual fading away into informality; and in his subsequent remarks the speaker developed this illustration into an argument against the logic of formal planning.

Mr. A. E. Richardson said he believed strongly in the formal method of planning. The informal actually competed with nature, but the formal acted as an admirable contrast. There were undoubtedly many fine French and German examples; but it was astonishing that London in this respect was not more generally known and appreciated. He had in mind particularly the squares of Belgravia and the streets and squares of Bloomsbury. Waterloo Bridge, with Somerset House as the background, formed in his opinion quite as imposing a scheme as that of the Place de la Concorde with its Admiralty building. Chambers's work he thought quite as good as the French Admiralty building, and it was, as a matter of fact, erected about the same time, Chambers having completed a course of study in Paris. London, continued Mr. Richardson, offered some of the best examples of town planning in the world, despite its many blemishes, which included the London Forum, or the area in front of the Royal Exchange, and the space in front of St. George's Hospital, which badly needed alteration.

Mr. A. E. Bullock commented upon the cleverness of the Greek type of plan, which, in the case of a town like Athens, took advantage of the hill and led up to a fine Acropolis. In English and Continental town planning the problem of street traffic had not yet been mastered—they had thought of the question from all points of view except that of traffic. He had recently been studying Wren's plan for London, and the polygonal treatment of a certain part seemed an admirable method of relieving congestion. This had suggested to him the idea of having circular roadways round circuses and other focal points for the purpose of getting traffic away from the centre. In London, municipal centres and railway stations, with the exception of Euston, were usually hampered by the lack of space.

Mr. C. G. Boutcher disagreed with Mr. Unwin that the same principles applied equally to large towns and garden suburbs. The problem of town planning, in his opinion, was the same as the problem of houses—they had a natural site and artificial requirements. The garden suburb should be planned, he thought, in the same way as one would plan a house—that was, for usefulness and convenience. In a large city, where one was treating with a community, formal planning only became appropriate.

Mr. F. M. Elgood said he thought that almost everyone was a formalist. In formal planning one saw fine and definite results; but in informal planning the effects were usually accidental. At Amiens, for instance, where buildings seemed to be piled up one above the other with the cathedral at the apex, the effect was purely accidental; and certainly it was very fine as it was. Probably none of those present, continued the speaker, would have the opportunity of laying out a city, but they might perhaps have the chance of planning garden suburbs. He himself was concerned at present with such a scheme. It should be remembered that a street was not necessarily informal because it was not a straight line; and Mr. Unwin had rightly emphasised the necessity for "closing in the picture" before the street went on too far. This had been done very effectively in many of the small garden suburbs. In large cities, architects should concern themselves with the grave need for keeping down the height of buildings. The proportion of Regent Street would eventually be entirely destroyed by the increased height of new buildings in place of Nash's scheme. Oxford Street, too, when ultimately built up, would be merely a tunnel. Another important aspect of the question was: How far should the character of buildings be controlled? This was a subject of almost perennial interest; and he warned architects against the possible danger of having to design in accordance with the views of a board of control which would perhaps be incapable of sound judgment.

A gentleman from Canada, who said he had come to England for the purpose of procuring plans, then asked the lecturer if he could provide him with any information concerning the distribution of area—commercial and residential. Mr. Unwin, he said, had created quite a stir in Canada in the town planning movement.

Mr. Gerald Horsley then put the vote of thanks, and said it appeared to him that there was a balance of opinion in favour of formalism. A paper read by Dr. Haverfield at the recent Town Planning Conference showed how far back extended the feeling for town planning. There were the plans of Chinese towns of the 11th century, those of Greece of the 14th century B.C., and of course those of mediæval England. The paper to which he had referred seemed to sum up the matter in this sentence: "The square and straight lines divided man civilized from the barbarian." It was impossible, concluded Mr. Horsley, to go through life without some distinct guiding principles.

Mr. Raymond Unwin, in reply, said
ought to have stated, but had omitted
do so for want of time, the principles,
they could be so called, adopted by
modern German school of informal to
planners. The formal, he continu
approximated natural growth; and
entirely disagreed with the speaker w
said that the principles for a town w
different from those for the country. Tr
the outskirts of a town were apt to beco
less formal than the centre; but they w
justified in maintaining the same princi
Proceeding, Mr. Unwin said that he
unable to find many really useful examp
of town planning in England; and he
not believe the effect of Somerset Ho
to be so good as the Admiralty build
on the Place de la Concorde. Turn
to the remarks of another speaker,
Unwin said if a town plan was unsuita
for traffic it did not satisfy its prim
requirement and had failed. Hav
established the main traffic lines the qu
tion was, How far was it natural to p
in a formal and orderly style? The b
of opinion seemed to be on the side
formalism.

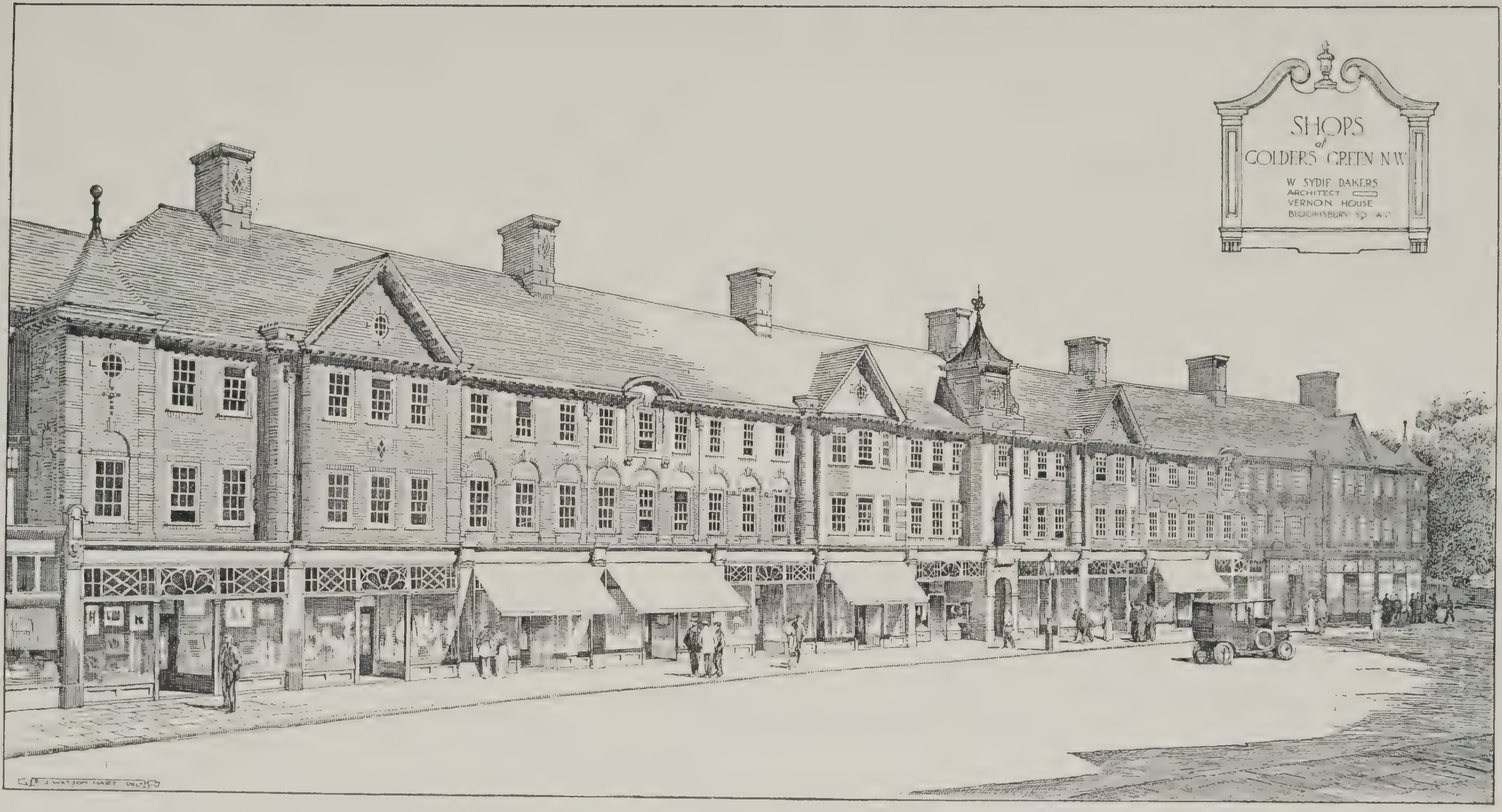
SOCIETY OF ARCHITECTS

ANNUAL REPORT.

From the twenty-seventh annual re
of this society it appears that during
period with which it deals, 139 memb
four honorary members, and thirty-
students have been elected, a total of
and after allowing for deaths, remov
resignations and lapses, the total mem
ship numbers 1,076. The number of
members and students constitutes a re
for recent years, but this number w
have been considerably exceeded had
the council closed the list in April last
accordance with the spirit of the ag
ment for the fusion of the society
the Royal Institute, in anticipation of
matter being concluded at an early d
The list has since been re-opened,
members desirous of recommending
didates should bear in mind the fact
it is liable to be closed at any time.

The Council record with regret
death of His Honour Judge Emde
member of the Registration Comm
of the society. The late Judge took a
active part and interest in promoting
first Registration Bill.

Registration: Last October a sub-
mittee was appointed to revise the
and report upon any amendments w
they might consider desirable on poin
detail without affecting the principl
volved. This was in view of a cour
action which the Council had decide
pursue to get the Bill considered du
the recent Parliamentary Session.
Bill, having been practically redrafte
the sub-committee, was approved by
Council, and everything was in read
for an active propaganda, when so
the members of the Council
approached by representatives of
Royal Institute, and it became appa
after friendly discussion, that some
might possibly be found for mutual a
ment on the broad question of ge
principles, and after due consideratio
Council suspended further action fo
time being. Representatives of the C
cil subsequently met representative
the R.I.B.A. Council at an informal
ference at Conduit Street, as a resu
which the Councils of both b
appointed official delegates to meet


SHOPS
at
GOLDERS GREEN N.W.
W SYDIF DAKERS
ARCHITECT
VERNON HOUSE
BLOOMSBURY SQ W.C.
F J WATSON HART DEL.

further discuss the question. The first joint conference was held in January, and was followed by other meetings, finally culminating in an agreement on the general principles of a Registration Bill, and proposals for the election of members and students of the society into the various classes of membership in the Royal Institute on certain conditions. The principles of the proposed Bill, and the conditions and terms of the scheme for the fusion of the two bodies, were made known to the members of the society by circular on April 4th, and the resolutions necessary for carrying the scheme into effect so far as regards the society were passed by the members either unanimously or by very large majorities at a special general meeting held on April 20th. A confirmatory meeting was called for May 11th, an undertaking having been given previously by the chairman that the agreement between the two Councils should be executed prior to the latter meeting. In the meantime, the proposals as affecting the Royal Institute were approved and confirmed by the general body of their members, and all that remained to complete the matter was the signing of the agreement and the confirmation by the society's members of the resolutions passed by them. On the eve of the society's confirmatory meeting intimation was received by the Council that the R.I.B.A. Council were advised that they had not the power under their charter to enter into the agreement, and as the society could not definitely commit itself without this safeguard, the Council decided to suggest to the members the adjournment of the meeting pending the completion and execution of the agreement. The meeting was consequently adjourned, and in due course the Council received an intimation from the Council of the Royal Institute that they proposed to make an application to the Privy Council for a supplemental charter which would give them the necessary powers to enter into the agreement. In the meantime, owing to all its activities having been temporarily suspended, the society has been put to the gravest inconvenience, and the Council were recently compelled to consider the position in view of the new session. After careful deliberation, it was decided that the work of the society should continue without reference to the negotiations proceeding between the Council and the Council of the Royal Institute. Everything, therefore, is proceeding as usual, and will continue to do so unless the negotiations are carried through, in which case all details then arising will be adjusted. In the meantime, the Council feel sure that the members will not take any steps which will tend to prejudice the society in any way, or make the position of the Council more difficult in regard to the negotiations still going on.

South African Branch.—The fourth annual general meeting of the branch was held in November last, when Mr. G. S. Burt Andrews was elected President; Mr. M. J. Harris, Honorary Treasurer, and Mr. E. H. Waugh re-elected Honorary Secretary. The total membership of the branch is 48; and there is every indication that the branch is making excellent progress and doing good work. Examinations were held in Johannesburg and Maritzburg. Last December a conference of South African architects was held at Cape Town, to consider a Bill which had been drafted for presentation to the Government of the Union of South Africa for the registration of architects. The society's branch was represented by Mr. E. H. Waugh, local Hon. Secretary, and a resolution was passed in favour of proceeding with the Bill, and the Cape Institute of Architects was appointed the medium of communication between the profession and the Union Government. The branch has also lent its support to a proposal for a Chair of Architecture in connection with the South African School of Mines and Technology at Johannesburg, and several of its members are actively engaged in organizing classes in various subjects.

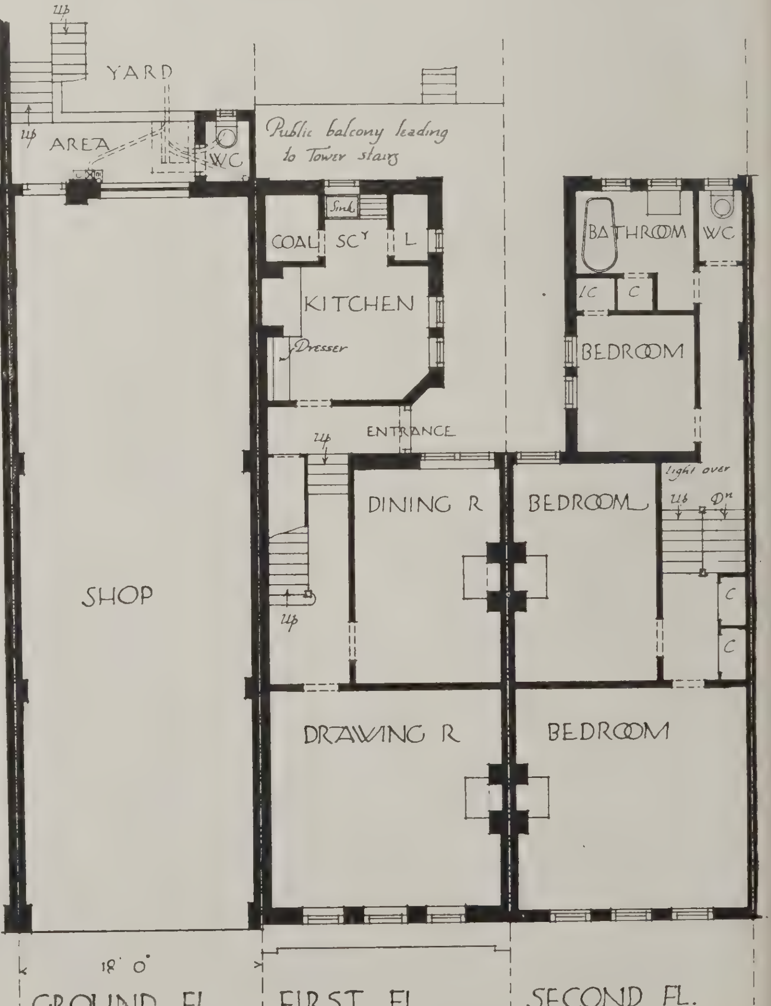
Practice Committee.—The committee called the attention of the Council to the procedure adopted by the Ecclesiastical Commissioners in issuing the detailed designs for Parsonage Houses, together with specification and bills of quantities, and the Council, after due consideration, approached the Ecclesiastical Commissioners on the matter, and have reason to believe that the protest made by them and by others will not be without effect.

On the recommendation of the committee, the Council, with the assistance of the society's local hon. secretaries, circularized Members of Parliament calling their attention to the Copyright Bill as affecting architecture, with the result that a considerable number of them undertook to give the Bill their consideration and support. The Bill has now passed the report stage.

General.—The year has been one of continued progress and development, as will have been gathered from the preceding observations, the work of the society has been seriously hampered by the unfortunate delay in the completi of the negotiations with the Royal Ins tute. Important proposals in connecti with the extension of the library, development and reorganization of the amination and membership schemes, a questions affecting every branch of society's work, have been held up. T delay is a matter over which the Coun have no control, but they feel that issues involved in the negotiations warr them in keeping the matter open as lo as possible, and they are glad to find th in the principle involved they have, shown by the action of the members the special general meeting, the c fidence and support of the society as body.

SHOPS AT GOLDER'S GREEN.

The flats over these shops are proached from the road by an open st case under the tower in the centre of block, which leads to a balcony exte ing along the back of the block. The vations are in multi-coloured red sa faced bricks, with a red tiled roof. architect is Mr. W. Sydie Dakers, of L don, W.C.



W SYDIE DAKERS, ARCHITECT.

SOME TECHNICAL MANUALS.

ectricity for Mine, Mill, and Factory.

Ve welcome two additions to the ellent series of "Electrical Installa- n Manuals," of which nine volumes ve now been issued, each dealing with ne special practical application of elec- al science. The volume on mining in- llations devotes four or five chapters to preliminary survey of general prin- les and requirements, and afterwards es specific attention to haulage, pump- , coal-cutting and drilling, ventilating, d winding. It appears to be done with h thoroughness as to render it a boon colliery engineers and contractors en- ged in the installation of electrical nt for mining service.

Equally praiseworthy is Mr. Devey's atise on "Mill and Factory Wiring," the pearance of which is singularly oppor- ie at the present moment, when so much ention is being directed to the need more efficient lighting in mills and tories, where, also, electricity is being reasingly adopted for the supply of wer. Both volumes are fully illustrated, d to each there is an efficient index.

lectrical Mining Installations. By P. W. Freude- her, A.M.I.E.E. Pages xii.—182, 6¾ins. by 4¼ins., e 2s. London: Constable and Co., Ltd., 10, nge Street, Leicester Square, W.C.

ill and Factory Wiring. By R. Geo. Devey, I.I.E.E. Pages xii.—198. Same publishers and e.

he Manufacture of Bricks and Tiles.

Dobson on Bricks and Tiles" had ome quite a classic when, in 1863, it s found necessary to revise it, and to d a chapter on making bricks by chinery. On that occasion the revision s carried out by Prof. Tomlinson, isted by Mr. Robert Mallet. The ision of the twelfth edition has been rusted to Mr. Alfred B. Searle, by om the work has been in great part written, and who has added several apters of entirely new matter, and many v illustrations. The book, indeed, has n completely recast, and is therefore all intents and purposes a new thing. still retains, however, its old-time cription as "a rudimentary treatise"; d in conformity with this character, the tor has dealt but lightly with such sub- ts as plasticity, refractoriness, and er matters that are understood to tend vards high complexity, and "would prive the present work of the simp- ty, practicality, and freedom from entific technicalities so characteristic its earlier editions, and would destroy value to those for whom it is pri- rily intended." Who "those" may be l be seen presently, and it may then pear that the editor is justified of his itude. With this qualification, we must ifess to some distrust of a constantly urring evasion of "scientific tech- alities." Such squeamishness is haps pardonable in an attempt to ex- in superficially to the general public abstruse subject; and doubtless the pularisation of science" has its uses. t the writers of technical manuals ght surely count with confidence on a onger power of assimilation on the t of those whose object in reading such ks is the acquirement of a knowledge technicalities, verbal and other. This, vever, is by the way; for certainly no lt can be found with the presentation the subject in the treatise under notice; in which, while the language is always simple and clear, the technical terms that arise are by no means shirked or whittled away, but are duly adopted and carefully explained (but the editor should not allow his printers to perpetuate the illiterate form "frustrum" of a cone); and, moreover, it must be admitted that the editor has a sound conception of the scope of such a work. "There are many persons," he writes, "to whom a general knowledge of the principal methods of brickmaking is very useful, but who do not wish to enter into a deep study of the scientific principles underlying this industry, nor even to learn the multiplicity of precautions which must be taken to ensure success in actual manufacture. Students of architecture, builders, and estate owners are all likely to be interested in the art of brickmaking, whilst caring little for its science." Mr. Searle has imparted a fresh interest and has no doubt secured a long career of renewed and perhaps increased usefulness, for a work that had been favourably known for more than a generation.

A Rudimentary Treatise on the Manufacture of Bricks and Tiles. By Edward Dobson. Twelfth edition, fully revised, and several new chapters added, by Alfred B. Searle. London: Crosby Lockwood and Son, 7, Stationers' Hall Court, Ludgate Hill. Pages viii.—274, 7ins. by 4¾ins., price 3s. cloth, 3s. 6d. extra cloth.

Steel Manufacture.

The phenomena of iron and steel casting, and especially the obscure reciprocal chemical reactions involved in the process, have been the subject of much patient investigation, which at length seems to be yielding useful results. The difficulties of research are (perhaps unconsciously) suggested by Herr Dichmann, when he says that during twenty years' practical experience in open-hearth furnace management he had been frequently faced with problems to which he was unable to find satisfactory solutions; and it is only after "a pause in such practical activity" that he has been able to investigate these questions as a whole. It would appear, therefore, that while the theorist lacks the insight that can only be obtained by constant and intimate practical experience, the practical man lacks opportunities for generalisation. Mr. Dichmann, having enjoyed exceptional opportunities of seeing the subject from all sides, has evidently made the most of them, and the conclusions he sets forth in his very clear account of one of the two chief methods of steel manufacture—that by means of the open-hearth or Siemens furnace; the other being, of course, the Bessemer or pneumatic refining process—will be welcome not only to manufacturers, but to all who aim at an intelligent understanding of a material that they are called upon to select or handle. The constructional engineer will find in this book much that is illuminating and suggestive.

The Basic Open-hearth Steel Process. By Carl Dichmann. Translated and Edited by Alleyne Reynolds. London: Constable and Company, Ltd., 10, Orange Street, Leicester Square, W.C. Pages xii.—334, 8¾ins. by 6ins.

Middleton's "Stresses and Thrusts."

It appears that this is really the sixth edition of Mr. Middleton's book, of which two additions appeared under a different title. Chapters vii. and ix. have been to a great extent re-written, while chapter xiv. is entirely new, and includes a coloured illustration, which is intended to indicate the way in which one of the Testimonies of Study required from students entering for the R.I.B.A. Associateship Final Examination should be prepared. In chapter viii., also, additional matter shows the method of calculating a steel joist when it is used as a stanchion; and chapter xxi., which has been written by Mr. H. Y. Margary, is apparently new. Examination papers set by the R.I.B.A. for Intermediate and Final candidates are usefully included, and their presence indicates the direction in which the book is likely to be most acceptable, although the subject and its treatment both entitle this very useful manual to the regard of many whose interest in stresses and thrusts is more practical than that of the "mere student."

Stresses and Thrusts. A Text-book for Students. By G. A. T. Middleton, A.R.I.B.A. Fourth edition, revised and enlarged. Illustrated with one hundred and seventy diagrams. London: B. T. Batsford, 94, High Holborn. Pages viii.—210, 7½ins. by 5¼ins.; price 4s. 6d. net.

THE PROPOSED BRITISH SCHOOL AT ROME.

As our readers are aware, mention was made by Mr. Gerald C. Horsley, F.R.I.B.A., in his presidential address to the Architectural Association (reported in the Journal of October 11th, p. 378) of a proposed British school for architects in Rome. On this subject, a representative of the "Standard" has obtained an interview with Mr. Arthur Keen, past president of the Architectural Association.

"There is a probability," Mr. Keen is reported to have said, "that the British school will include other arts besides architecture. At present there is a British school at Rome, but it is almost entirely devoted to archæology. The French architects have their school at the Villa Medici, one of the palaces, I believe, of the old Medici family. Here the travelling student of architecture is taught his art, and sculpture and painting are also studied. The students are in daily touch with each other. The result is that a school of French architecture has been evolved such as we do not have in this country. We have no distinct feature in the architecture of our public buildings, and we are a long way behind the architecture of some of the Continental countries in bridges, monuments, etc. At the same time it is true that we are ahead of the other countries in our domestic architecture, but even that is always changing. At the present architects are largely designing houses in the Georgian style; before that it was the Queen Anne style, and before that it was the Gothic. Yet we have, I think, a school of domestic architecture.

"The men who go to this school in Rome will be travelling students whose expenses will be paid. Hitherto the education of our architects has been very indefinite and unsystematic. Up to ten years ago their education was simply a matter of apprenticeship. There are now three day schools in London, one of which is a school of the Association, and that was the first school of its kind in England. In such a school as that proposed at Rome the students will have a system of instruction which has not been possible before. Every one admits that at present the instruction is too limited, and there is a general feeling that we ought to carry instruction much further. I believe that by lack of system we are far behind France, Austria, and America. An instance of the importance with which Americans regard architecture is to be seen in the fact that at Harvard College a professor for architecture has been appointed at a salary of £3,000 a year, while all the other professors receive salaries of £1,000. Of course, we have nothing like this in this country, but out of the new scheme may come a distinct expression of British architecture."

SOCIETIES AND INSTITUTIONS.

MANCHESTER SOCIETY OF ARCHITECTS.

Presidential Address by Mr. Edgar Wood, F.R.I.B.A.

On October 11th the first of the meetings of this Society's winter programme was held, when Mr Edgar Wood, F.R.I.B.A., delivered the presidential address.

In the room was exhibited a large collection of drawings and photographs of important architectural works, old and new, which were obtained for the occasion by the President.

Mr. Wood said that he proposed to depart from the usual custom which had been followed on many previous occasions of reviewing the year's work and architectural achievement. He could foresee that a series of lamentations might be the result, and that was not the spirit in which a new session's work should be undertaken. A paragraph from James Russell Lowell suggested a subject for discussion and thought: "There is only one thing better than Tradition, and that is the Original and Eternal Life out of which all tradition takes its rise." We all acknowledge, continued Mr. Wood, that Tradition is the greatest factor and the greatest book that goes to our making. The difficulty is in its interpretation. The temperament of vigour will seek to express itself upon lines founded upon his own conception of the spirit of the work of his predecessors, strengthened by an intense craving to create for himself. How much of originality, and of reliance on the past, is compatible with freedom of thought?

On tradition alone we cannot advance. If we make the past a crutch and ourself a cripple, we are exponents of intellectual stagnation. Do we show our appreciation of the Greeks more wisely in attempting the mechanical reproduction of their forms, or by endeavouring to comprehend the spirit of full-grown manhood in which they wrought, to kindle ourselves by the emulation of it, and to bring it to bear with all its plastic force on our wholly new conditions of life and thought?

External imitation of a bygone excellence, or even by applying the rules which analytic criticism has formulated from the study of it, produces the artificial, not the artistic. The Italian Renaissance fell short in its architecture because to a living body of social and scientific new birth was bound the corpse of a past art. The great and magnificent development of plan was not accompanied by corresponding achievement in design. The architects were hard at work as students of antiquity, while the sculptors were yearning to create.

Yet the notion of absolute originality was an absurdity. A man cannot escape in thought any more than in language, from the past. Not less preposterous than raising dead styles is the invention of new ones.

Art must be at once retrospective and progressive, its very progress a reflection returned from the mirror of the past. Its artists must be endowed with that energy of life which vitalises and becomes a channel of creative power. To the extent which they possess this force are they original, creative, fecund. Not in skill, device, artifice, or mechanism are originative impulses to be found, but in life, —"They are torrents of Will." The works may be in ways dissimilar, but the quality they possess is their measureless vitality, which the academic is unable to stifle or the archæologist to smother.

From abstract thoughts and reasonings our minds can travel to the things of to-day, and enquire how they influence our endeavours. In our planning, we exercise every mental energy in satisfying practical requirements. We visit the most recent developments in every utilitarian direction, and this vitality has justly yielded its reward. Has there been equal success in the development of the architectural contribution? or has our energy exhausted itself before we are architects? Our clients, it may be said, do not encourage these things; but is that sufficient to stifle aspiration? Are not our convictions so true that we are ready to put them aside before the indifference of others?

We must, again, remember that the test of an artist will always be that he has something to say—that he is moved by some faith that he holds. He may be a scholar or interesting, logical, industrious; but unless he is sincere he can only be a partial success.

Mr. Wood referred to the collection of works in the room. Reverence forbade any allusion to those whose works were of the long past, but of the others he could touch upon some as worthy of grateful tribute, and he concluded by an analysis of Westminster Cathedral, some works of Prof. Pite, Mr. Henry Wilson, and others whose work was exhibited. J. T. H.

SHEFFIELD SOCIETY OF ARCHITECTS.

President's Views on Town Planning.

At the opening meeting of the Sheffield Society of Architects, at Sheffield University last week, Mr. J. B. Mitchell Withers, F.R.I.B.A., the president, in the course of his presidential address, referred to the approaching 25th anniversary of the society, and said during the period that had elapsed since the society was founded nothing was more marked than the recognition by both branches of the profession with which they were in touch, of the power of combination and organisation for good, and the education of those who were to follow them as architects and surveyors.

Touching upon the question of town-planning, he said it was chiefly an economic question, and while for health's sake open spaces and airy dwellings were needful, they must not forget that the house was the shelter of the family, the home of those individuals, and must always be the chief consideration in a well-planned city or town. Wide streets with costly pavements were secondary to healthy houses and playgrounds as open spaces.

So far as the city of Sheffield, the largest in Yorkshire, was concerned, he expressed the hope that the wisdom and foresight of the members of the City Council might be such that the city, with its natural and beautiful surroundings, might be fated to hold the position in their great county to which it had so rapidly risen. He expressed sorrow that the architectural classes at the University were not tak greater advantage of.

The work executed by students in th Department of Architecture at the Ur versity was inspected, and the membe were gratified at the all-round excellen of the specimens exhibited, the improv ment in the measured drawings, compar with previous years, being especial noticeable.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.

Materials under the Microscope.

The second meeting of the session the Architectural Craftsmen's Society w held last week in the Technical Colleg Glasgow, under the presidency of M James S. Boyd. Mr. J. S. Glen Primro delivered a lecture on "The Microscopi Examination of Architectural Materia This method of investigation, whilst n superseding the ordinary physical a chemical methods of testing, was point out as a most useful adjunct to them, p ticularly as it showed the actual arran ment of the constituents determined analysis. Interesting micrographs we shown of various qualities of buildi stone used in Glasgow and London indicate the varieties which were best a to withstand the erosive action of atmosphere, these being chiefly sa stones containing low percentages of c bonates. The sizes and shapes of p ticles of sands useful for making stro mortars, etc., were shown much enlarg and reference was made to the testing cements in the light of their micro-str tures. The internal structures of vari forms of iron and steel used in archit tural design were described and illustra by numerous lantern slides, and det were also given as to the investigati carried out in cases of serious failu The methods of detecting brittleness fatigue were indicated, and the eff of certain kinds of heat treatment mechanical stresses were discussed, well as the important changes brou about by these in the structure of metal.

BATTERSEA POLYTECHNIC.

Lectures on Illumination.

The first of a special series of tw lectures on illumination arranged to t place at Battersea Polytechnic delivered by Professor J. T. Morris October 17th. On this occasion the turer dealt with incandescent glow lan laying stress on the enormous progres the last few years and the extraordin difficulties that had been successfully o come in making metallic filament lan The gradual evolution of the carbon ment, Nernst, Tungsten and Tanta lamps, the methods of attaching the ments, and making allowance for "sag" were illustrated by a series lantern slides. The actual filaments in various types of carbon and met filament lamps were mounted intact one of these slides, and thrown upon screen in order to show their compara thinness, and the lecturer subseque showed that even these fine wires c support a tension of a 2 lb. weight wit snapping. A great variety of the la types of lamps was also shown, inclu the latest 200 volt. 16-c.p. Osram la and the new drawn wire Mazda lamps series of life curves on metallic fila lamps (the latest tests of the Nati Physical Laboratory) also attracted n attention.

In conclusion the lecturer expressed his thanks to the General Electric Co., the British Thomson-Houston Co., the Edison and Swan Co., and Messrs. Siemens Bros., Ltd., for their assistance in arranging an excellent display of lamps. As we have already announced, subsequent lectures by other specialists are to deal with gas, oil, and acetylene lighting, the measurement of illumination, and practical lighting problems.

Royal Sanitary Institute: South African Branch.

The South African Branch of The Royal Sanitary Institute are arranging to hold a congress in Cape Town on November 9th, 10th, and 11th. This is the first sanitary congress to be held in British South Africa, and it is hoped that a large number of delegates will be sent by the municipalities and other authorities interested in sanitation. Among the subjects set down for discussion are: The disposal of sewage, the prevention of tuberculosis, the inspection of food, milk supplies, and school hygiene. Papers will also be read dealing with other aspects of public health work. The South African branch, which has only recently been established by the Royal Sanitary Institute, seems to be energetically carrying on the traditions of the parent institution, and no doubt its work will have a beneficial effect in the development of public health administration in the Union of South Africa. The Honorary Secretary to the branch is Dr. A. Jasper Anderson, the Medical Officer of Cape Town.

Builders' Benevolent Institution.

From the sixty-fourth annual report of this excellent institution, which is supported by voluntary contributions, it appears that during the past year five men and two women have been added to the list of pensioners, whilst four pensioners—three men and one woman—have died during that period, so that there are now thirty-two men and twenty-four women receiving the benefits of this institution. It is shown in the balance sheet that the total amount for the year in donations and annual subscriptions was £1,378 10s. 6d., and that the amount disbursed on pensioners' accounts was £1,923 16s. 3½d.; the excess of expenditure here apparent, and the additional necessary expenses, being balanced by the interest account, etc.; but unfortunately it became necessary to sell out £250 worth of stock. From the list of pensioners it appears that the lowest age among the men is 64, and the highest 87, the average age being nearly 75. The oldest woman is 91, the youngest 56, the average being nearly 73. The institution was established nearly seventy years ago, and more than 500 pensions have been granted to distressed builders or their widows. Mr. F. G. Rice, President; and Mr. Frank May, Treasurer, are making an earnest appeal for funds, and it is to be hoped that in the result it may be possible to announce at the annual dinner (which is to take place at the Whitehall Rooms, Hotel Metropole, Charing Cross, on November 16th) that the sum of at least £1,200 which is necessary for the continuation of the good work will have been subscribed. Contributions should be sent to the offices, Koh-i-Noor House, Kingsway, W.C. Mr. Thomas Costigan is the secretary.

ENQUIRIES ANSWERED.

Architectural Draughtsmen Under Government.

DRAUGHTSMAN writes: "To whom should application be made for an appointment as architectural draughtsman or assistant in H.M. Office of Works?"

—The Civil Service Commissioners, Burlington Gardens, W., would probably be able to give full information with respect to such appointments.

Diocesan Surveyorships.

S. (Yorkshire) writes: "Kindly inform me what qualifications are necessary to become a Diocesan Surveyor. Is an examination necessary?"

—Proof of professional training and experience, and personal influence among highly placed Churchmen, are the only qualifications of which we are aware.

Sanmicheli Veronese.

H. P. W. (Manchester) writes: "Kindly let me know what books contain references to Sanmicheli Veronese, and also whether any articles have been published recently on his life and works."

—All the general histories of the Italian Renaissance contain references to Sanmicheli. The best English source is "The Architecture of the Renaissance in Italy," by W. J. Anderson, which gives also a good list of books in all languages devoted to general and detailed consideration of the subject. For personal details consult Vasari's "Lives," and for illustrations "Le Fabbriche civili, ecclesiastiche, e militari," M. Sanmicheli, 1832, and "Cappella della Famiglia Pellegrini, Verona," 1816. A paper was read by Mr. J. Stuart Syme before the Edinburgh Architectural Society on March 13th, 1901, dealing with Sanmicheli and his works, and was printed in full with illustrations in the Builders' Journal, Vol. XIII. Measured drawings of the Porto del Palio appeared in the A.A. Sketch Book, 3rd series, Vol. XII.

G.

"Sweat" on Shop Windows.

WEEKLY READER writes: "Can you recommend a cure for the 'sweating' of an enclosed shop window? I have just completed such a window with what I thought to be ample ventilation. Within a few minutes of lighting the single incandescent burner, however, the window is covered with 'sweat,' which disappears on opening one of the enclosure doors. To light from the reverse side of the enclosure is quite unsatisfactory, while to fix a lamp outside the shop window entirely is impossible, because of its exposed position to heavy winds."

—This is a constant source of trouble when external and internal temperatures differ; and though ventilation will usually prove effective (except in cases of sudden extreme changes of temperature), when no heat-giving burner is enclosed within the case, in the latter event it is almost impossible to prevent condensation unless by the provision of such liberal ventilation that dust enters so freely as to render the enclosure almost useless. A row of atmospheric burners is sometimes fitted along the stallboard just inside the glass (which is thus kept warm), but besides being expensive, this is not always a successful expedient, and cannot be adopted in all circumstances. Some cases of this nature have also been cured by fitting a light frame with second sheet of glass about 1 in. inside the front, to intercept moisture from the external glazing. This inner glazing, not being in contact with the outer air, will not suffer from condensation. The most satisfactory arrangement, however, is to divide the window by a transom, giving the show-case a glazed top at this height, and lighting by an inverted incandescent burner with reflecting shade fixed above.

G.

Foreclosure on Mortgage.

X. X. X. writes: "We recently erected a building for a certain company, and payment was made by 30 per cent. in cash, and the balance by three, six, and nine months' bills of equal amounts. In order to secure these bills, a mortgage was given to us on the building. The land is leased to the company by private individuals. After the work was completed, and we had received our cash instalments, the company went into voluntary liquidation. The point on which we particularly wish to ask your opinion is as to when our power of sale arises. Can we exercise this power three months after the first bill becomes due, or must be await until three months after the whole of the instalments become due? We may mention that there is no special clause referring to this point."

—In the ordinary course of things, a mortgage deed contains clauses by which foreclosure becomes enforceable as soon as any default has been made; acts of bankruptcy are specially provided for. I am of opinion that the passing of the resolution for voluntary liquidation gives you the immediate right to foreclose your mortgage, although I confess that I am puzzled to understand why you accepted bills when you held the security of the mortgage deed. It would be well for you to consult your solicitor, with a view to taking prompt action.

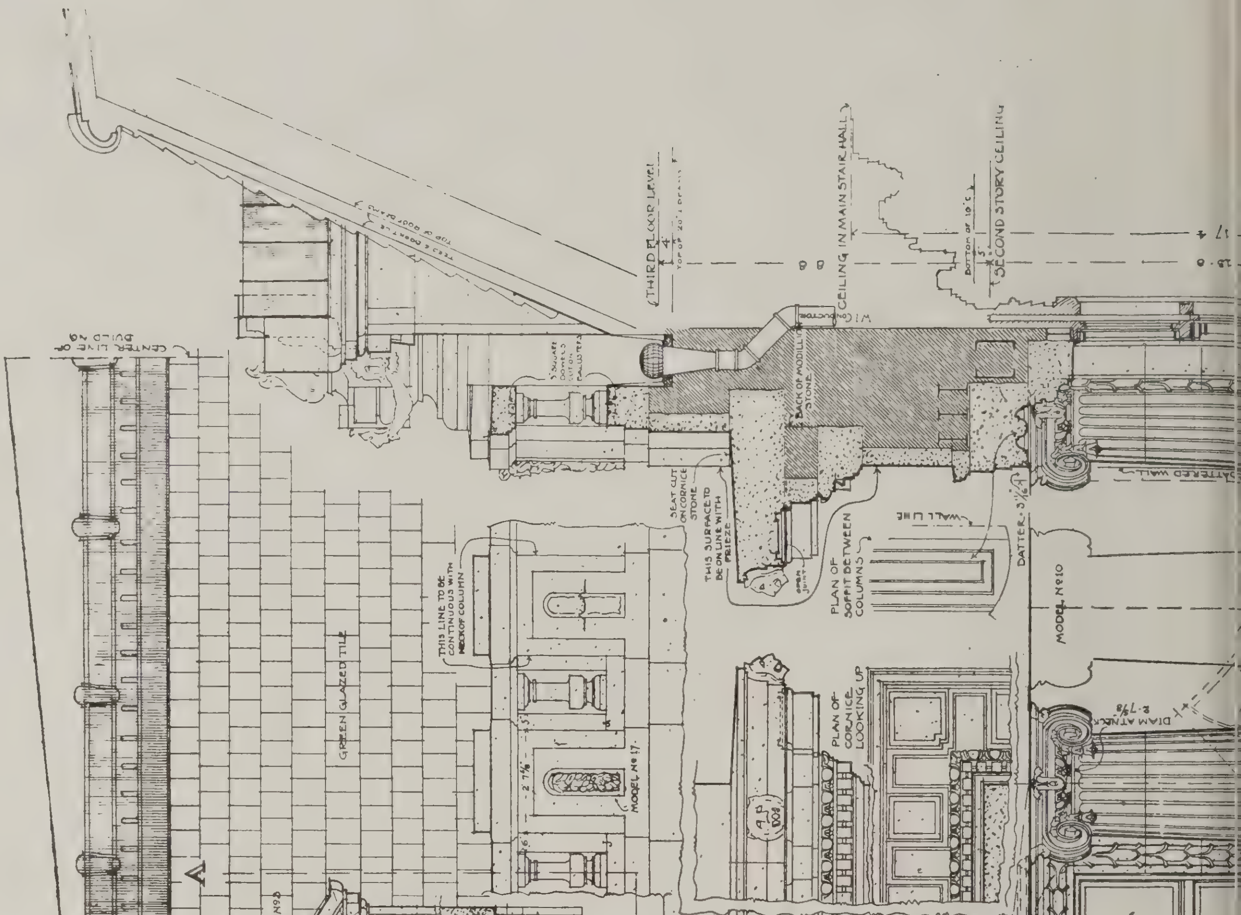
F. S. I.

Damp Walls.

X writes: "I have a brick-built house, which is very much exposed to the weather. Damp has found its way through the walls on the weather side. I am having all the joints thoroughly raked and repainted in cement. What would be the best covering for the walls to make them absolutely watertight? In the same locality I have found two workmen's cottages which were affected by damp coming through the walls during the past winter, and on examining the cottages I find they are only built with 4½in. brick."

—In exposed positions rain will often drive through even a 14in. wall, so that it is not surprising that 4½in. work fails to keep dry. Pointing in cement will no doubt help to preserve the work, but will be fruitless in keeping the cottages watertight. To cover with tile- or slate-hanging, or to render in cement or roughcast (3-coat work) are probably the best methods to adopt, but if this is not desired the walls could be treated with one coat of the silicate or petrifying liquids, such as Szerelmey's Silicate Paint, or Blundell's. Either of these if applied after a long spell of dry weather will help to keep the walls dry. Write Messrs. Blundell, Spence and Co., of Hull, for a copy (gratis) of their guide to the use of petrifying liquids. If appearance is of no importance, to coat heavily with hot tar and pitch would probably be effective and cheap.

X.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GREEN GLAZED TILE
CENTER LINE OF BUILD'G
MODEL No 1
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MODEL No 9
MODEL No 10
MODEL No 17
PLAN OF CORNER DIL ON LINE D D
THIRD FLOOR LEVEL
CEILING IN MAIN STAIR HALL
SECOND STORY CEILING
PLAN OF CORNICE LOOKING UP
PLAN OF SOFFIT BETWEEN COLUMNS
WALL LINE
THIS LINE TO BE CONTINUOUS WITH NECK OF COLUMN
SEAT CUT ON CORNICE STONE
THIS SURFACE TO BE ON LINE WITH FRIEZE
ONE STONE ALL CORNERS
MITER JOINTS
DIAM AT NECK
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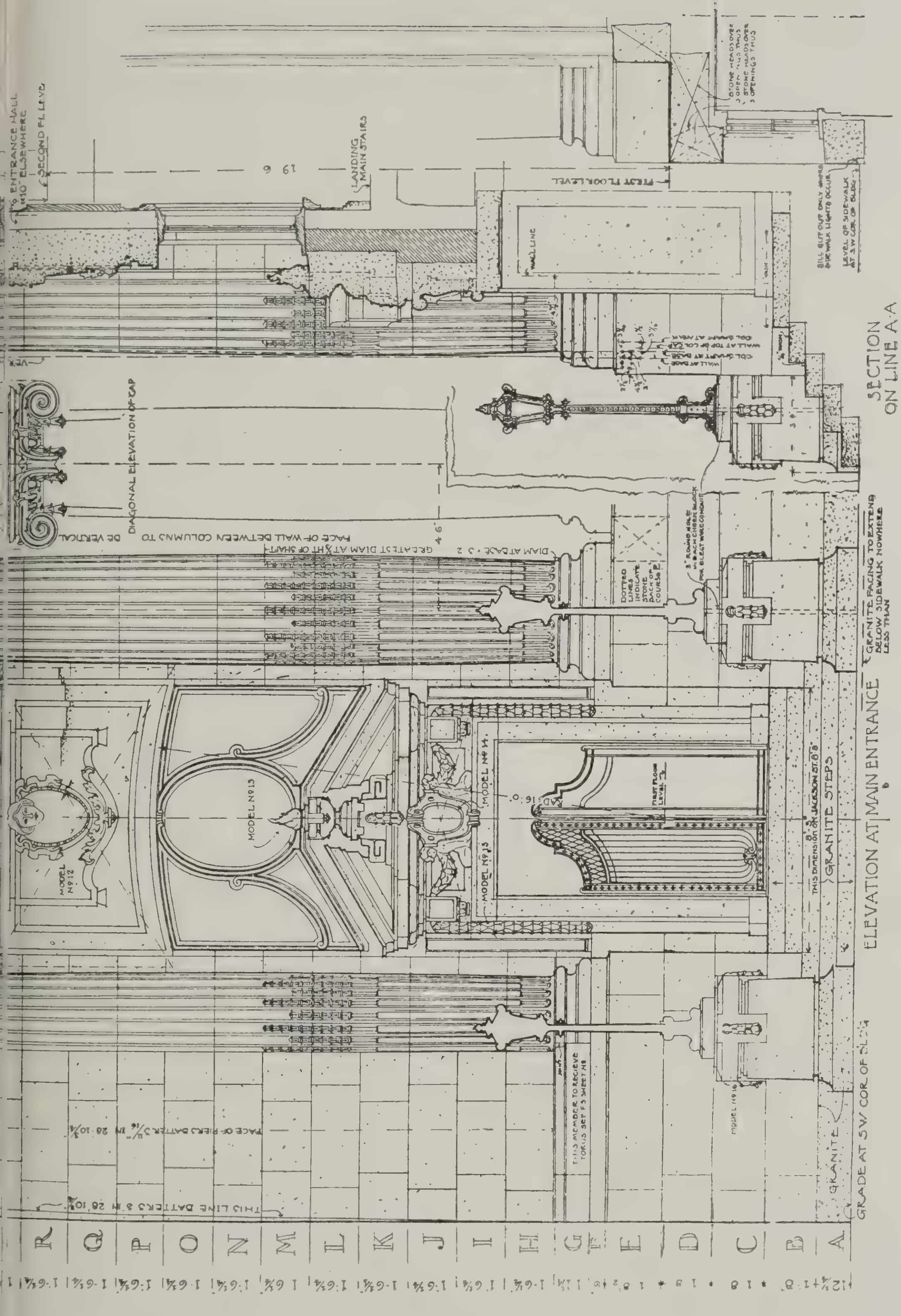

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(Particulars on page 447.)

FIRE PREVENTION NOTES.

The Data of Fire Study. Newspaper accounts of great fires are hastily produced, and are commonly written up in such a manner as to suggest that the aim is sensational or picturesque description rather than accuracy; and nearly always there is a disposition to heighten the effect of the "story" by putting the extent of the damage in figures which are so liberal that, cumulatively, they would, if true, ruin all the insurance companies. The newspapers, therefore, do not commonly afford very reliable data for the serious study of fires; and even when they give an unadorned report of an inquest, the necessity for compression usually discounts its value very seriously for the student, who can never feel sure that some vital point has not been omitted. In producing full and accurate reports of great fires, therefore, the British Fire Prevention Committee is fulfilling one of its most useful functions; especially when, as in the case of the report on the fire at the Empire Palace Theatre, Edinburgh, on May 9th, 1911, in which ten lives were lost, the matter is prepared by such acknowledged experts as Mr. Ellis Marsland and Mr. Max Clarke, F.R.I.B.A., and is fully illustrated with views and plans, without an adequate supply of which, of course, even the most admirable of verbal reports would be comparatively useless—("Publications of the British Fire Prevention Committee —No. 157." Price 2s. 6d. 8, Waterloo Place, Pall Mall).

Origin of a Theatre Fire. The Empire Palace Theatre, Edinburgh, was generally constructed of brick, with fire-resisting construction in the staircases and corridors. It will be remembered that the fire broke out at about 11 p.m., while a performance was in progress. The fire presumably originated in a lantern or lamp which was one of the "properties" of "the Great Lafayette," who lost his life in the fire. This lamp, of which a detail drawing is very usefully included in the report, was about 30 in. high by 15 in. in diameter, and was made of wood, over which canvas was glued. It was of Oriental pattern, hexagonal in shape, open top and bottom, and its panels, ¼ in. thick, were perforated all over with circular holes, 3 in. in diameter, which were covered with thick gelatine of various colours; and it was wired for seven 8-candle-power lamps. The lantern hung from a grid, and was fed by a light wire proceeding from the prompt side. From this lantern two witnesses saw a strange light run out at the top, where it quickly set fire to the scenery. It was not thought that the gelatine caught fire. The three electricians who gave evidence were in practical agreement that fusing took place within the lantern. The electrical engineer to the City of Edinburgh expressed some doubt as to whether the substance used for covering the holes was really gelatine, and he suggested that this might be a trade term for something composed of celluloid, since gelatine would melt at a lower temperature than it would be subjected to by this use of it. It will be seen, therefore, that the evidence as to the origin of the fire is not very definite or conclusive; but it will doubtless serve a very good purpose in directing closer attention to the details involved.

Fire-resisting Curtains. The fire-resisting curtain did all that could be reasonably required of it. It was formed of 2 in. by 2 in. by ¼ in. framed angle-iron, and was divided into twenty-four compartments, filled in with panels 4 ins. thick, constructed with corrugated sheet iron on each face, and filled in with slag-wool. By remaining in position for eighteen minutes after the outbreak—when it fell inwards towards the stage—it enabled every member of the audience, which numbered about 3,000, to get out of the theatre. Thus its existence was thoroughly justified, even though one or two accidents attending its use on this occasion seem to point to the necessity for further attention to this feature. The person who began to lower the fireproof curtain had apparently not noticed that in its descent it must knock two men off their perches on which they were operating the limelight. In the nick of time this peril was observed by another person, who arrested the descent of the curtain while they got away; otherwise they must have been killed. That is a contingency against which provision should be made. Then, the act-drop or tableau curtain having been already lowered, it prevented the fireproof curtain from going down right on to the stage, draught from an open door blowing the tableau curtain forward about 2 ft. 6 in., and thus causing an obstruction which might have been very serious. This, therefore, appears to be another point requiring attention; while the methods of fixing such curtains seem to require further consideration.

"The Evolution of a Safe Theatre." Of the ten persons who lost their lives, three perished on the stage, three were found in a temporary dressing-room, one in the adjoining dressing-room, two on a staircase leading to the upper dressing-rooms, and one received fatal injuries in jumping from a window. One or two of the witnesses expressed the opinion that if all the people on the stage had at once made for the available exits, they could all have been got away quite easily; but apparently some of them made an attempt to save some of the property, or to rescue the animals (a horse and a lion belonging to Lafayette perished), while others may possibly have been too much terrified to find their way out. It is difficult to see how, by the utmost ingenuity in planning, such contingencies con be fully provided against; but, nevertheless, as a lesson of the fire, it devolves upon the architects of theatres to exercise their utmost skill in devising further means for safeguarding the people on the stage side of the house. But, on the whole, it is fairly easy to assent to the statement which opens the "Note" by the editors of the publication under notice: that "The report of the fire contained in this Red Book demonstrates that the evolution of a safe theatre has proceeded on satisfactory lines."

Some Minor Points. One or two points of minor interest may be noticed. Some of the witnesses were questioned about the fireproofing of draperies, and a typical answer was that of the managing director of the theatre, who said: "The fire-proofing is useful to protect against a small amount of flame, but I am afraid it is useless as against a strong flame and great heat. That is as far as science has gone as yet." There is some danger lest such pronouncements, while perfectly just, should be popularly misconstrued, with consequent neglect of the very necessary precaution of rendering fabrics as far as possible fire-resisting; since it may be superficially argued that if such treatment does not render the material absolutely safe, the expense it involves might just as well be spared. The same reasoning might, indeed, be—as no doubt it too often is—extended to the whole scope of fire-resistance. But it is palpably and absurdly fallacious. Fireproof fabrics—particularly in theatres—immensely reduce the risk of fire by frequently repelling the effects of chance sparks or small flames which would immediately set light to untreated materials. But when the fire-resisting fabric takes fire, or the fire-resisting building is burnt out, the man in the street is apt to lose the little faith he had, and fall to jeering; whereas a moment's reflection, if he were capable of it, would convince him of the truth that a system is not to be condemned on its failure to perform impossibilities, but should be judged by its general success: the evidence of which, however, is necessarily silent and obscure; whereas an occasional instance of alleged failure makes a great stir and creates an erroneous popular impression. Another small point that is worth consideration was one that was suggested by a scenic artist. He found the hose "all properly coiled"; and he added: "I have noticed in many places the pipe has been slung by a small piece of twine and hanging up and down, and in the case of a rapid fire you turn a lever and it is on; but when you have to uncoil a quantity of pipe it occupies time." True; but the coiling need not be so primitive as to necessitate so large a consumption of precious time: the hose should be mounted on a proper carriage.

Amateur Fire Brigade. The Hendon Fire Brigade protest against the "comic-opera" view of them that seems to have been suggested to some minds by the proceedings in court last week, when the constitution of the brigade was brought into notice. A claim was made against Hendon Urban District Council by Frederick Bass, "an infant," for damages for injuries received while he was helping to drag defendants' fire escape. In stating the case for the plaintiff, Mr. Joseph Ricardo said that it was the defendants' duty to provide means for extinguishing fires, "yet," he said, "from motives of economy they did not have a proper fire brigade, but had an arrangement with certain tradesmen of the town, to whom they paid a shilling a week, in return for which they attended fire-drills and acted as firemen when necessary. They had a fire-escape which could be pulled by men instead of by horses as it ought to be. The Council not only employed amateurs, but had an insufficient number of these, and relied on the boys of the place to help." After a fire-drill a year ago, a large number of boys, among whom was the plaintiff, aged 14, seized the ropes and dragged the escape homewards, and in descending an incline the escape, which weighed 14½ cwt., got beyond control. Plaintiff was knocked down, his thigh was broken, and his left leg was now permanently shortened. The jury found that the Council's servants were negligent in allowing the boy to pull the escape, and judgment was given awarding plaintiff

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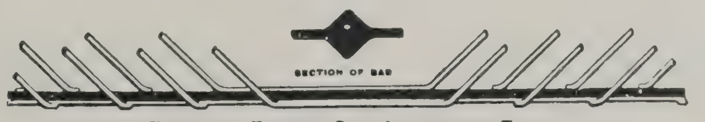

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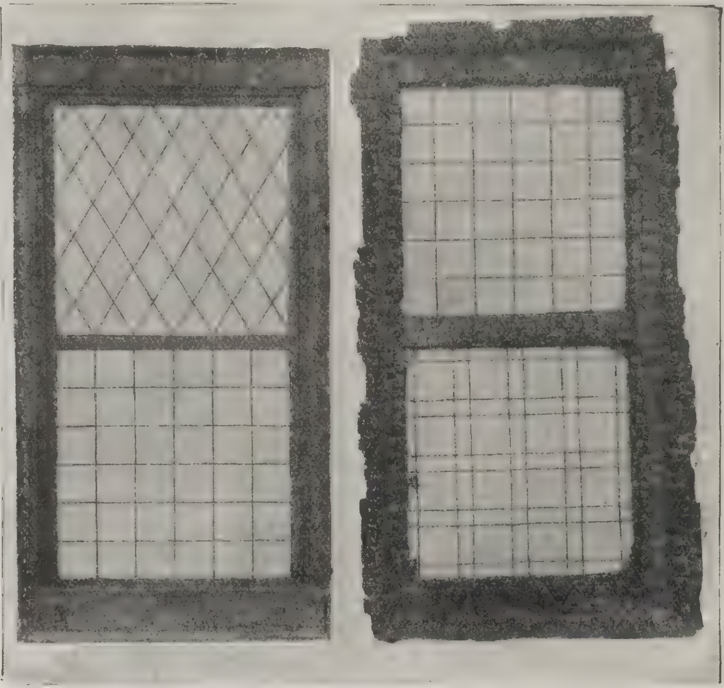

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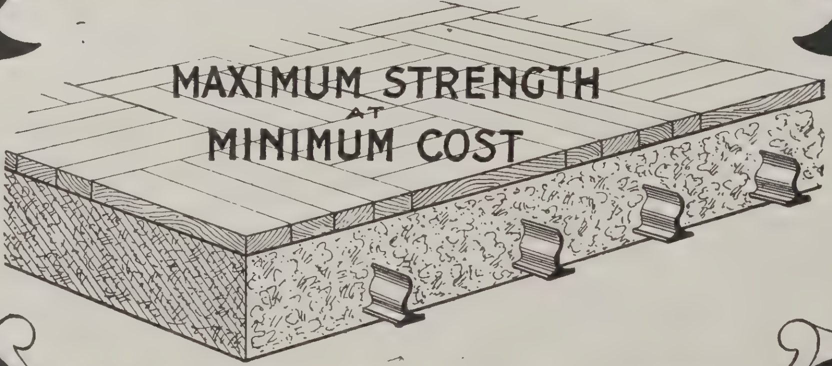
WOOD BLOCKS

ROCK ASPHALTE

Steelworks, OAK STREET, GORTON.



Saw Mills, SCHOOL ST., GORTON.

Tel. Address NAMOH, MANCHESTER.

Telephone No. 637

CONSTRUCTIONAL STEELWORK.

HOMAN & RODGERS, Engineers. 10, Marsden St. MANCHESTER.

oo, with a stay of execution pending ·peal. The brigade members, who prost against being (as they allege) held up ridicule in the King's Bench Division quel to this regrettable accident, declare what, indeed, was affirmed by an expert tness at the trial before Mr. Justice arling—that the majority of fire-brigades this country are of the same type as at of the defendants. Fires at Hendon e very infrequent, and it is therefore necessary to incur the heavy expense of aintaining a regular brigade. One of e witnesses at the trial made the rather gnificant remark that the few fires at endon "were generally put out before e brigade arrived." No doubt it must difficult to get the men together with fficient speed; and the whole thing ems very primitive. It points to the sirability of organising the fire service a national basis, so as to secure unirmity and efficiency of administration, nd equitable apportionment of the cost maintenance. Until that is done, occaonal "comic opera" incidents, and some at are of much more serious cast, are suredly inevitable.

The Fire at Leicester. A fire that, while apparently it presents no unusual features, yet claims attention by ason of its magnitude, was that which, October 5th, consumed four large siery factories and a church at Leicester. he factories were of four, five, and six oreys, and burnt with tremendous pidity. The fire broke out at about o'clock in the evening, when a service as being held in the church. There was panic, the large congregation getting it without accident or disorder; and it as not until an hour and a half after e outbreak that the church became inolved. The fire devastated an area of o ft. by 300 ft., and the damage was timated at a quarter of a million pounds erling. Particulars of the construction the buildings are not yet forthcoming.

L.C.C.'s New Motor Fire Appliances. The London County Council has obtained tenders for the supply of five petrol-driven motor fire gines, and for three petrol-driven motor scape vans, as well as for the supply of n electrically driven motor turntable ng ladder for use in the fire brigade. he five motor engines will take the place three horsed steam fire-engines, and the ree motor escape vans supersede two orsed vans, while the motor turntable dder will get rid of a horsed long ladder. ive firms tendered for the five engines, nd the lowest tender—£4,442, which inudes spare wheels, etc., and £250 for xtras—was that of Messrs. Leyland Motors, td., Leyland, Lancs., and permission has een given to the firm to sublet the supply the pumps to the Rees Roturbo Manucturing Company, Ltd. Four tenders r the escape vans were received, the west being that of Messrs. Henry imonis and Co., Pretoria Works, Walamstow, N.E., amounting to £2,164, and is has been accepted, permission being iven for the supply of the chassis to be b-let to Commercial Cars, Ltd. Two rms tendered for the motor turntable long dder, and the lower tender, that of the Ceder" Electric Traction, Ltd., 112, reat Portland Street, W. (£1,137) was ccepted, with leave to sublet portions of e work. The total expenditure on these cquisitions is £7,941 6s. 8d., against the ire Brigade Committee's estimate of 8,300.

A FIREPROOF HOSPITAL.

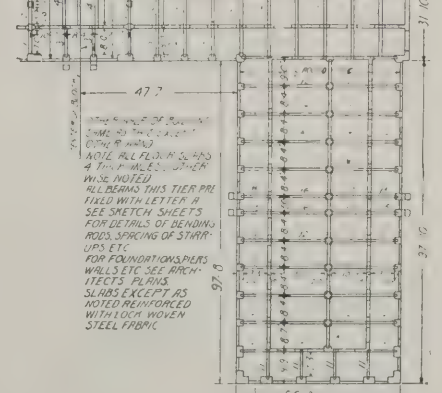
A large fireproof hospital which has been recently completed for the Brooklyn Children's Aid Society is erected on a site approximately two acres in area, and is elevated above the grade of the street. The structure was designed with a view of caring for convalescents as well as for those actually confined to their beds.

In plan, the hospital is as in the figure below, which is one-half of the general layout. The buildings are situated to the west end of Coney Island. Very many destructive fires have visited Coney Island in past years, and for this reason this hospital was made fireproof, although nearly all forms of construction at Coney Island are of wood, except a bath-house of reinforced concrete.

Coney Island creek is about one-quarter of a mile from the building site, and gravel and sand were received by the boat load. The terra-cotta blocks also for the walls, partitions, and floors were received in the same way. Cement, steel, lumber for forms, and artificial limestone were received in car load lots. A spur of the South Brooklyn Railway Co. ran behind the site, and cars were usually unloaded within two days.

The plant consisted of a batch mixer driven by a 4-horsepower gasolene engine. The engineer who ran the mixer also fed it, which was found to be a very good scheme. The ordinary ignorant labourer does not appreciate how to run the mixer so as to get the maximum efficiency out of it. He will let the engine run with a full load longer than necessary, and will also let the drum fall back with great force after tilting a batch. The engineer would let the mixer run empty if there was any delay in taking the concrete away.

The footings for the hospital rest on sand 4 ft. below grade. They are of plain concrete, 1 ft. thick, and project 6 in. all round the piers which carried the walls. These piers are 2 ft. by 2 ft., spaced 8 ft. 4 in. on centres under the walls, and are connected by concrete arches 8 in. wide, 8 in. crown depth, and 8 in. rise. The footings were concreted one day and the forms stripped the next. The winds and rain would wash down the banked sand with remarkable facility, and it was often a question of re-excavating for foundations when concreting did not immediately follow excavating. The piers and arches were concreted at the same time to prevent any shear at the haunches. Bulkheads were placed at the crown of the arches at the end of the day's work.


2'0
24'0
73'0
31'10
47'7
NOTE ALL FLOOR SLABS 4 THICK UNLESS OTHERWISE NOTED
ALL BEAMS THIS TIER PREFIXED WITH LETTER A
SEE SKETCH SHEETS FOR DETAILS OF BENDING RODS, SPACING OF STIRRUPS ETC
FOR FOUNDATIONS, PIERS WALLS ETC SEE ARCHITECTS PLANS.
SLABS EXCEPT AS NOTED REINFORCED WITH LOCK WOVEN STEEL FABRIC
97.8
50-2

PART PLAN OF FIREPROOF HOSPITAL CONEY ISLAND, NEW YORK,

In excavating for the boiler room, which was about 40 ft. by 40 ft. in area, water was struck about 4 ft. below grade. There was, therefore, about 6 ft. of water to be overcome. It was thought sheeting would have to be resorted to, but a cheaper and more expeditious way was used. The sand was stepped back at about five different levels. The men in the pit would shovel up to the first level, where the sand was thrown to the next level, etc. A double diaphragm pump, connected to a gasolene pump, was kept working all the time, so that the excavation was kept free from water. This method of excavating the pit was much cheaper than sheathing or the using of a derrick, but was somewhat hazardous. A heavy rain storm would have washed the banks of fine beach sand back into the pit. At the time, however, there was a spell of dry weather, so that there was some assurance of success at the outset.

The boiler-room foundation slab is 12 in. thick, and was reinforced both ways with $\frac{5}{8}$in. square twisted rods 6 in. on centres placed 2in. from the top of the slab. The slab projects 6 in. outside of all the walls.

In order to prevent leakage into the boiler room through cracks caused by the failure of one day's work bonding into the work of the previous day, the concreting was not stopped until the walls had been carried above the high-water levels. A rich mix was used, and as a result of the mix and continuous placing of the concrete the boiler room is watertight. The stairs leading to the boiler room were put in at the same time as the foundation slab and walls. The pump was kept working for a day after the concrete was placed, when the discharge end was placed into the boiler room and the room was flooded. This water was intended to counteract the upward hydrostatic pressure.

In the first floor framing plan, the slabs are 4 in. thick, reinforced with steel fabric. The beams in the wings are 8in. by 12 in. properly reinforced. Slabs and beams were concreted at the same time, and a bulkhead was placed across the centre of the panel at the end of the day's work. The hospital floor was designed for a live load of 60 lb.

As the steel was unloaded from the cars, it was separated into the various sizes and lengths, and stakes were driven into the sand to distinguish them. No extensive system of racks was necessary, because there was a large area of site, which was not built upon, and the rods were laid out on this area.

Bending was done with a vice, and proved very expeditious and satisfactory. The hooks on the ends of the $\frac{3}{4}$ in. rods and larger size rods, however, were made with a forge.

Each morning the reinforcing for the day's work was placed in about $1\frac{1}{2}$ hours, and the rest of the day was spent in concreting. The similarity of the panels made possible the re-use of the forms. In some cases the wood was used six times. In concreting, the fabric rested on the

FIREPROOF HOSPITAL, CONEY ISLAND, NEW YORK.

forms, and was raised by the labourers as the concrete was poured on the panels.

The water table, band courses, and cornice are all of artificial limestone. This stone was manufactured at the contractors' plant at Newtown Creek and shipped to the job in car load lots. In the manufacture of this stone, clear white pine patterns are first made corresponding in size to the full-size drawings of the stone. These patterns are then impressed in a wet sand mould of special manufacture. The patterns are then withdrawn, and into the matrix a liquid mortar is poured. This mortar consists of 1 part Portland cement to 2 parts of aggregate, the composition of the aggregate being 1/3 marble dust and 2/3 limestone graded from $\frac{1}{8}$ in. to $\frac{1}{2}$ in. Four days after the mortar is poured, the stones are hoisted from the moulds and cured in the open air. They remain covered with canvas kept continually saturated with water for a period of two weeks. The stones are then cleaned of the moulding sand and placed upon the rubbing bed. The stone is susceptible of rubbing, bush hammering, crandalling, tooling, vermiculation—in fact, any treatment to which natural stone can be subjected.

The walls of the building are of a special kind of hollow tile known as Dennison Interlocking Block. They were much cheaper than brick walls would have been. Special jamb blocks were used at the doors and windows, and were placed by the bricklayers with facility as soon as they became accustomed to handling the blocks. One thousand of these blocks will equal, when laid in the wall, 10,000 common brick. In an 8 in. wall 1,000 inter-locking tiles will lay up 725 sq. ft. of wall surface.

The construction of the second floor in the hospital building consisted of 4 in. concrete beams spaced 16 in. on centres. One round rod was placed in each beam, the size varying with the span. No stirrups were used in these beams. The depth of these 4 in. beams also varied with the spans, 8 in., 10 in., or 12 in. blocks being used, as shown on the drawings. A 2 in. compression slab was placed on top of the blocks at the same time the beams were poured.

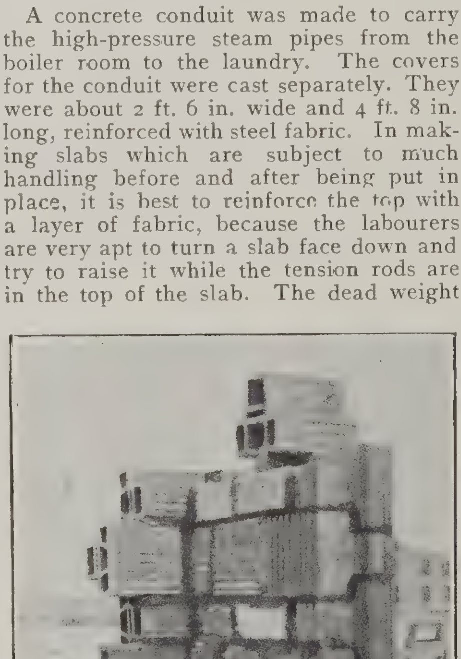
The lintels were of reinforced concrete, while the sills were of the artificial limestone heretofore described. The lintels were 8 in. by 10 in. reinforced with $\frac{5}{8}$ in. or $\frac{3}{4}$ in. square twisted rods, according to the span. The bottoms were rebated, and the sides of the lintels were of 2 in. hollow tile blocks. These blocks were placed loose in the forms for the lintels, and concrete then poured. The mortar of the concrete would find its way between the joints and hold the blocks fast after the forms were removed.

The centreing for the second floor consisted of $\frac{7}{8}$ in. by 5 in. rafters placed 16 in. on centres, supported by 3 in. by 4 in. posts. The advantage of using the small beams was that a flat ceiling was obtained for the first floor. This was very desirable for the hospital, as the breaks in the ceiling of a beam and girder construction serve as lodging places for dust and vermin.

The approximate size of the laundry building is 30 ft. by 50 ft. The foundation walls are 24 in. thick and are solid. The first floor is 6 in. slab and girder construction, reinforced with $\frac{1}{2}$ in. rods spaced 6 in. on centres. It was designed for a live load of 12 lb. per sq. ft. The second floor is the same construction as the hospital.

A concrete conduit was made to carry the high-pressure steam pipes from the boiler room to the laundry. The covers for the conduit were cast separately. They were about 2 ft. 6 in. wide and 4 ft. 8 in. long, reinforced with steel fabric. In making slabs which are subject to much handling before and after being put in place, it is best to reinforce the top with a layer of fabric, because the labourers are very apt to turn a slab face down and try to raise it while the tension rods are in the top of the slab. The dead weight
of the slab alone is sufficient to crack
slab, if it is even of moderate weight,
to say the jar when it is carelessly drop

A parapet wall 2 ft. 8 in. high goes
round the building, and the roof is
tended to serve as a roof garden for
children. This wall was continuous, w
out any breaks in it, and was laid with
Dennison interlocking tile blocks. O
long stretch of straight wall without
jamb blocks or openings, or special po
of plumbing, these blocks are very sa
factory. The outside walls of both bu
ings were stuccoed.



FIREPROOF HOSPITAL: VIEW SHOWING CONSTRUCTION OF WALLS.

ARCHITECT AND PENCIL INVENTOR.

An illustrated booklet, which will
found specially interesting to archit
and draughtsmen, is entitled "Pen
from the Eighteenth Century to the
sent Time, and a Short History of
Koh-i-Noor House." The "brief his
of the pencil" is told in light and ag
able style; and it is recalled that whil
antiquity no instrument similar to
pencil was known, in the middle
lines were drawn with disc-shaped
angular pieces of lead. In the fourte
century oblong pieces of lead or si
were used for drawing on a smooth
face covered with chalk or powder;
at the beginning of the fifteenth cent
a mixture of lead and tin was used
Italy; and it was not until 1764 that
discovery of a "black-lead" mine in
rowdale, Cumberland, suggested the
mation of pencils in which little stick
graphite were enclosed in wood. Th
pencils, although sold at incredibly
prices, were so eagerly bought that
mine was soon exhausted, and it was
until 1790 that Josef Hardtmuth,
Vienna, and Conté, of Paris, succeede
preparing a mixture of refined grap
and clay, which for pencil-making
passed in excellence the Cumberl
graphite. It will be noted with inte
that Josef Hardtmuth was trained as
architect, designed the monumental pa
of Prince Liechtenstein, and bec
Ducal Director of Architecture.
pencil factory in Vienna became
successful. In 1828 he was succeeded
his sons Carl and Ludwig. Eventu
the factories were removed to Budw
in Southern Bohemia. Franz Von Ha
muth, son of Carl, became a partne
1852. He brought to the business consi
able scientific acquirements and much
ventive genius, which he applied with g
success to the products of the fact
among them being the famous Koh-i-
pencil. He died in 1896, and the busi
is now carried on by his three child
who during the past few years
effected great improvements in it;
Koh-i-noor pencil, as at present produ
representing the *ne plus ultra* of draw
implements. The booklet, which is
fusely illustrated with views, many of t
in colours, of the firm's fine offices at
i-noor House, Kingsway, and of var
departments in their enormous pencil
tory at Budweis, will be sent gratis
post free to anyone who cares to a
for it on office notepaper or postcard

Miners' Hall, Bolton.

The Committee of the Lancashire
Cheshire Miners' Federation, in defer
to the wishes of a number of the com
tors for the plans of the above, have
tended the duration of the competitio
January 6th, 1912.

NEWS ITEMS.

Seventeenth-Century Casement Window.

The example of a seventeenth-century sement window shown on p. 423 is taken m the house number 25 in the High eet of Guildford. The fasteners are ry ingeniously contrived, and although many years have elapsed since they were hioned, they are still effective, locking casements with perfect security. The tch-bar is raised simply by a turn, and pressed back into position by means of spring.

Contracts for "Modernia" Tiles.

The Perfect Tile Co., of 13, Feather-ne Buildings, Holborn, W.C., are fixing out 500 yds. of "Modernia" tiles and yds. of red floor tiles at "Oaklands," rsham Road, Dorking, a house now ing erected by Messrs. Hall Beddal. e of the wards in the Strand Union firmary, Sheffield Street, Lincoln's Inn elds, is being carried out in coloured al tiles for Messrs. McLaughlin and rvey, Ltd. The above firm have also st completed the "Modernia" tiling at a use at Fulmer, near Stow, for Messrs. hitby Bros.

wn-planning Scheme for Twickenham.

An important town-planning scheme is be carried out at Twickenham. The ea scheduled comprises 1,880 acres, of ich 1,520 acres are within the parish of wickenham. On the Surrey side of the hames a strip of land, varying in width om 100 ft. to 300 ft., and extending om Richmond to Kingston, has also en secured and vested in the Surrey unty Council. Important new means of mmunication, it is suggested, could be ened up, including a bridge from Eel e Island.

Mr. Cole, representing the War Office, s asked for Kneller Hall and Hounslow eath to be excluded from the scheduled ea, stating that the Local Government oard had no power to sanction the in-usion in the scheme of any Crown pro-erty.

New Monument for the Pantheon.

Five years ago M. François Sicard, the ulptor, was commissioned to execute a onumental group of statuary represent-g, besides its symbolical features, the ational heroes of the Great Revolution d the National Convention. A plaster st of this monument has now been set p in the Pantheon, in order to test its itability to the architectural setting.

The monument represents the draped male figure of France with drawn sword n a pedestal in the centre. On her right re the heroes of the Revolution pressing rward with uplifted arms as if taking e famous oath of fidelity to the Consti-ution. In the front rank are Robes-ierre, Danton, and Camille Desmoulins; nmediately behind them Vergniaud and ondorcet, followed by Gensonne, Lazare arnot, and Marat. On the left is Hoche, n horseback, preceded by two little drum-er boys, and with a young Revolutionary olunteer marching beside him with eager plifted face. The figures behind Hoche, ver which floats the French flag, repre-ent the conquering races from which the rench nation sprang—the Gauls, the ormans, the Franks, and also the Huns, s well as the Roman conquerors and the reek colonists. The execution of the onument in marble will, it is understood, ccupy the sculptor for the next four or ve years.

New Picture Palace at Handsworth, Birmingham.

A new picture palace has just been opened in Soho Road, Handsworth, Birmingham. The building, which has been erected at a cost of about £3,000 from the design of Mr. Hurley Robinson, A.R.I.B.A., by Mr. Percy W. Cox, is 137 ft. long and 60ft. wide, with seating accommodation for upwards of 800 people.

Electric Firm's New Branch Office.

We are informed that the Western Electric Co., Ltd., have, for the convenience of customers throughout Scotland, opened a branch office in Glasgow, at 49, West Campbell Street, where their representative, Mr. Malcolm Breingan, will give personal attention to all enquiries for cables, telephones, and electrical supplies. Demands will be met from stock, thus ensuring prompt deliveries. The telegraphic address is "Microphone, Glasgow," the telephone number being 1999 Central.

Wimbledon Common.

The Wimbledon and Wandsworth Borough Councils have now definitely decided upon the form the memorial to the Wimbledon and Putney Commons Conservators will take with regard to the provision of better facilities to the residents. The petition asks for the erection of a refreshment bungalow in the Windmill enclosure or elsewhere, and that further facilities be granted for the playing of cricket, football, and other games. It is also suggested that the Conservators should enlarge their management by a scheme to be propounded under the powers conferred upon them by the Commons Act of Parliament, 1871, and in this respect the councils offer their assistance.

Hampstead Garden Suburb.

The human "professional beauty" is not more often photographed than Hampstead Garden Suburb, whose more or less lovely features appear on innumerable postcards and in many other pictorial publications. The latest of these is a handy little album called "Ven's Picturettes of the Hampstead Garden Suburb" (price 2d.: Ven's Publishing Company, 4, Princeton Street, Bedford Row, W.C.), which comprises five-and-twenty views that may be admitted to have realised the publishers' aim of producing them artistically.

It is announced that the Hampstead Garden Suburb Free Church will be opened to-day by the Rev. Charles Brown, D.D., President of the National Free Church Council.

A sum of between £6,000 and £7,000 has already been secured towards the building fund. Mr. E. L. Lutyens, F.R.I.B.A., is the architect: the building, which is of free Renaissance style, has accommodation at present for 750, and when finally completed with seat 1,050. The total outlay up to the present is estimated at £12,030, and the completion of the west end will cost a further £3,000. The manse was built by the Second Hampstead Tenants, and has involved an additional expenditure of over £1,000.

New Slaughter-houses, Glasgow.

New slaughter-houses have just been opened in an area between Duke Street and the Cattle Market, Glasgow. The street walls are of stone with enamelled brick facing inside, and the divisional walls are of terra-cotta brick. There is chilling accommodation for 180 carcases on the ammonia compression process. Twin-bar overhead runways are carried throughout the building, and there is an electric lighting installation, and an installation of Lancashire boilers for the provision of steam and hot water. A section of the buildings is set apart for the laboratory and for various rooms for the veterinary inspector and his staff. The total space occupied is 11,462 square yards, and the cost of the building is £126,000. The buildings have been erected from the plans of Mr. A. B. McDonald, city engineer, and the contractors for the masonry and brickwork were Messrs. John Green and Co.

Bournemouth's Town-planning Scheme.

Mr. Thomas Adams, Local Government Board inspector, held an inquiry at Bournemouth last week into an application from the Corporation under the Housing and Town Planning Act for authority to prepare a town planning scheme with reference to the Boscombe Manor and Wentworth Lodge Estates, which constitute practically the only remaining undeveloped land on the sea front. Recently Lord Abinger disposed of Boscombe Manor Estate for £70,000, and Lord Portman is contemplating developing a portion of Wentworth Lodge Estate. Little opposition was offered to the preparation of a scheme, the objections being on matters of detail which may arise later. Reference was made to the generous action of the landowners in offering the Corporation a portion of the land immediately on the coast line for the construction of a drive along the cliff tops.

DETAILS, OLD & NEW.—XXX.

We publish on pages 442 and 443 a detail of the façade of the new building for the North-Western National Insurance Company at Milwaukee, Wisconsin, of which a photographic view is published as the centre plate in this issue. The detail is not put forward as free from criticism—in particular we think the entasis of the columns is over accentuated. It is nevertheless a good example of modern work as carried out in America, and in that respect is worthy of careful study.

LONDON MASTER BUILDERS' ASSOCIATION.

A Council meeting of the London Master Builders' Association was held at Koh-i-Noor House, Kingsway, W.C., on October 19th.

The Finance Committee's report was read and approved, and the report of the Carpenters' and Joiners' Conciliation Board meeting was reported.

The Council gave its consideration to matters relating to the Industrial Council appointed by the Board of Trade, to a petition that had been lodged against the Trade Disputes Act (1906), and to various other trade matters, to the erroneous report in the Press of the annual meeting of the London Association of Slate Merchants and Master Slaters, and to the next issue of the hand-book. The following were elected as Associate members of the Association: Messrs. The Metropolitan Asphalte Co., C. Loosley and Sons, and F. A. Clark and Son.

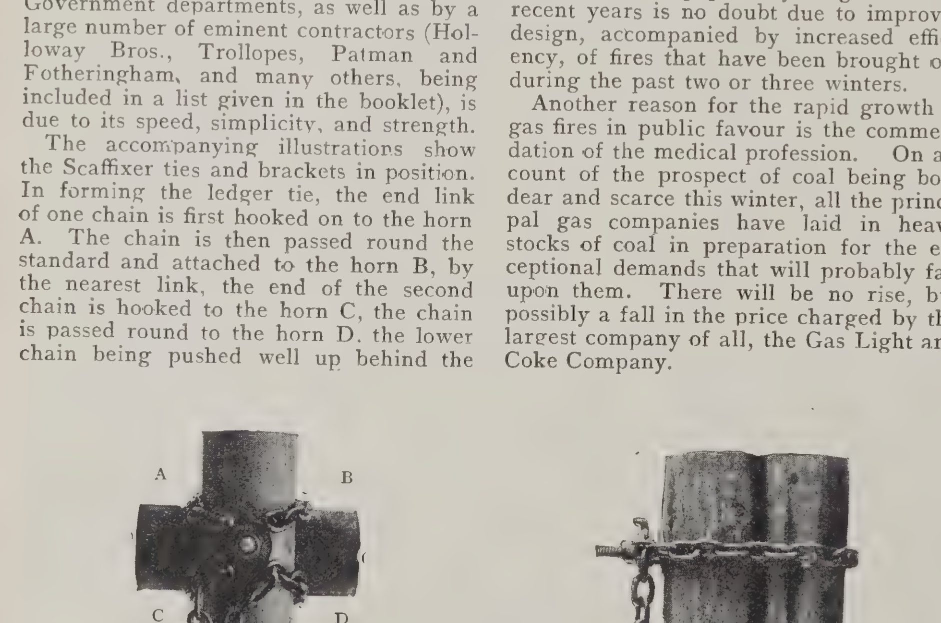
The following were nominated for membership: As Ordinary Member, Mr. A. E. Symes; as Associate Members, J. Russell and Co., Ltd.—THOS. COSTIGAN, Secretary.

TRADE AND CRAFT.

"Scaffixer" Scaffold Ties.

"Particulars, prices, and a few photographs" are given with regard to the Scaffixer Scaffold Ties in a booklet that has been issued by the Patent Rapid Scaffold Tie Co., Ltd., 124, Victoria Street, Westminster (with branches or agencies in Birmingham, Manchester, Newcastle, Cardiff, New York, Paris, Australia, New Zealand, and South Africa). The "few photographs" amount to about a score, and in most cases they show large and important London buildings on which Scaffixer ties have been, or are being, exclusively used. Among them are the new Middlesex Theatre of Varieties, Drury Lane, W.C. (contractors, Allen and Co., Pimlico); the new Hovis Bread Mills, Vauxhall Bridge, S.W. (contractors, the British Fireproof Construction Co.); the new Money Order Office, Holloway, N. (contractors, Leslie and Co., Ltd.); the Y.M.C.A. building in the Tottenham Court Road (contractors, John Greenwood, Ltd.); the Savoy Hotel extension, 1910 (contractors, Leslie and Co., Ltd.); the Peabody Trust Buildings, at Fulham (contractors, Messrs. W. Cubbitt and Co.); L.C.C. Repair Depôt, Woolwich (Chas. Wall, Ltd.); and many others that are of hardly less importance. Testimonials from several well-known contractors agree in stating in effect that the Scaffixer ties are an invaluable aid to rapid construction, and that they effect a very considerable saving on the amount of scaffolding required. The success of the system, which has been adopted by H.M. War Office, Admiralty, Office of Works, and other Government departments, as well as by a large number of eminent contractors (Holloway Bros., Trollopes, Patman and Fotheringham, and many others, being included in a list given in the booklet), is due to its speed, simplicity, and strength.

The accompanying illustrations show the Scaffixer ties and brackets in position. In forming the ledger tie, the end link of one chain is first hooked on to the horn A. The chain is then passed round the standard and attached to the horn B, by the nearest link, the end of the second chain is hooked to the horn C, the chain is passed round to the horn D, the lower chain being pushed well up behind the standard, and the apparatus screwed up. This is all done so quickly that the operation may be said to take longer to describe than to perform. For light scaffolds the ledger tie may be made with one chain, fixed diagonally, say from A to D. For the hemping or bracing tie, the end link of the chain is hooked to one horn of the hook-plate, and the chain passed round the poles to the opposite horn and screwed up. The Scaffixer bracket is used as a temporary support for the ledger pole until the permanent Scaffixer ties are made. The ties are of guaranteed British steel forgings, and the blocks, being Sherardised, are perfectly rustless. They can be either purchased or hired.



THE "SCAFFIXER" SCAFFOLD TIE.

Giant Tiles.

A new departure in the tile industry that has been made by Mr. W. H. Turner, is the manufacture of plate porcelain. By means of this process tiles are produced in slabs, the minimum size being 5 ft. by 3 ft., while any thickness can be made. It is possible to make them large enough to tile a room with four tiles, each occupying one side of the room, while the ceiling and floor can also be laid in the same way. One of the advantages claimed for them is the reduction of the number of joints, and hence the greater area of sanitary surface.

Fires for the Winter.

With persistent rumours of coal strikes and coal famines, and the summer weather drawing to a close, it is not surprising to learn that gas companies are finding difficulty in coping with the incoming orders. The growth in popularity of gas fires in recent years is no doubt due to improved design, accompanied by increased efficiency, of fires that have been brought out during the past two or three winters.

Another reason for the rapid growth of gas fires in public favour is the commendation of the medical profession. On account of the prospect of coal being both dear and scarce this winter, all the principal gas companies have laid in heavy stocks of coal in preparation for the exceptional demands that will probably fall upon them. There will be no rise, but possibly a fall in the price charged by the largest company of all, the Gas Light and Coke Company.

FEDERATION NEWS.

Northern Counties Federation.

A quarterly meeting of the Board of Representatives was held at the Grand Hotel, Sunderland, o September 27th, Mr. Fred W. Ranken, Presiden in the chair, supporting whom were Mr. John W White, President of the National Federation, an thirty-eight representatives.

The secretary reported that the National Feder tion had approached the Institute of Municip Engineers with respect to the demand for mixe schedules with tenders.

The secretary, Mr. W. H. Hope, was congratulated on the success of his arrangements for th visit of the National Federation to Newcastle i July last, and as some recompense for the add tional work which he had performed without stin of time or personal effort, he was presented, on behalf of the members, with a copy of Hobson's wor on "Worcester China," and a cheque for £25.

Mr. Hope thanked Mr. Ranken, the members an the local secretaries for their help throughout, an for the handsome acknowledgment of his efforts He reminded members of the munificence of th President of the National Federation (Mr. J. W White), who had helped the entertainment fund ver handsomely, and Mr. Hope also warmly acknowledged the personal kindness of their President Mr. Ranken.

The Sunderland Association called attention t the steps which were being taken by the operativ joiners' societies to coerce non-union men t become members of their societies. In two case Federated employers had been informed by th societies' official that if the non-union men did no join the societies, the unionists would hand in thei notices to cease work. The operatives contende that the question did not come within the scope o the Conciliation Shceme, as the workman was th sole arbitor as to whom he worked for, and th employers had no authority to interfere with th free exercise of that right. The matter was not s simple as it looked, as the societies had expresse their intention of supporting their members in an withdrawal of their labour, and had counselled th action complained of. This the Sunderland Association contended was striking work. Similar demand were being made in the Yorkshire Federation area The question had ultimately come before the Sunderland Local Conciliation Board, when it ha been referred to the Northern Centre for furthe consideration. The Yorkshire Federation had aske the National Federation to give an authoritativ ruling with regard to the procedure to be adopted The report was received.

Mr. John Proud and Mr. W. T. Weir, the Federation's representatives upon the Advisory Trad Committee, Northern Division, under the Labou Exchanges Act, forwarded their report of the firs meeting of the Committee held on 10th August 1911. The proceedings were of a formal characte and related principally to the drafting of rules. The Committee had been appointed to deal with the questions arising upon the administration of the Act between Employers and Workpeople. The division is made up of 28 members, of which 14 represent the employers and a similar number the workmen, and it covers the Counties of Durham, Cumberland, and Northumberland. The appointment of members on the Committee is made by the Board of Trade, and is honorary.

The proposed revision of clauses 20 and 28 of the National Form of Contract, and the proposed Agreement for Sub-Contractors, were reported upon, and it was resolved

> "That a small committee, consisting of the President, Vice-Presidents, and the Secretary, be appointed to go into the matter, and to forward to the National Federation any recommendation they may consider necessary."

A report upon the deputation's interview with Mr. Sidney Buxton and Sir John Simon upon the National Insurance Bill was given by Mr. John W. White, to whom a hearty vote of thanks was accorded in acknowledgment of the great amount of work he had put in to the consideration of the Bill and his very interesting report.

A vote of condolence was passed with the family of the late Mr. J. C. Hope, a member of the Board and one of the honorary auditors, and a record of his services was directed to be placed on the minutes. Mr. Robert J. Huntley (Sunderland) was appointed honorary auditor in the place of the late Mr. J. C. Hope.

The Secretary reported that Mr. J. W. White had been invited by the Board of Trade to serve on the proposed Industrial Disputes Board. The object of the Board would be to step in with suggestions, etc., whenever an industrial dispute had reached a deadlock. The presentation of cases to it would necessarily be quite voluntary. The decisions would not be forced upon unwilling parties, and would not prevent workmen striking or employers from locking out. The Industrial Board would rely upon moral effect alone and the force of their good counsel. The report was adopted, and the congratulations of the Federation were offered to Mr. White.

It was decided to hold the Annual General Meeting of the Federation at Newcastle-on-Tyne, the exact date to be fixed by the President.—W. H. HOPE, Solicitor, Secretary.

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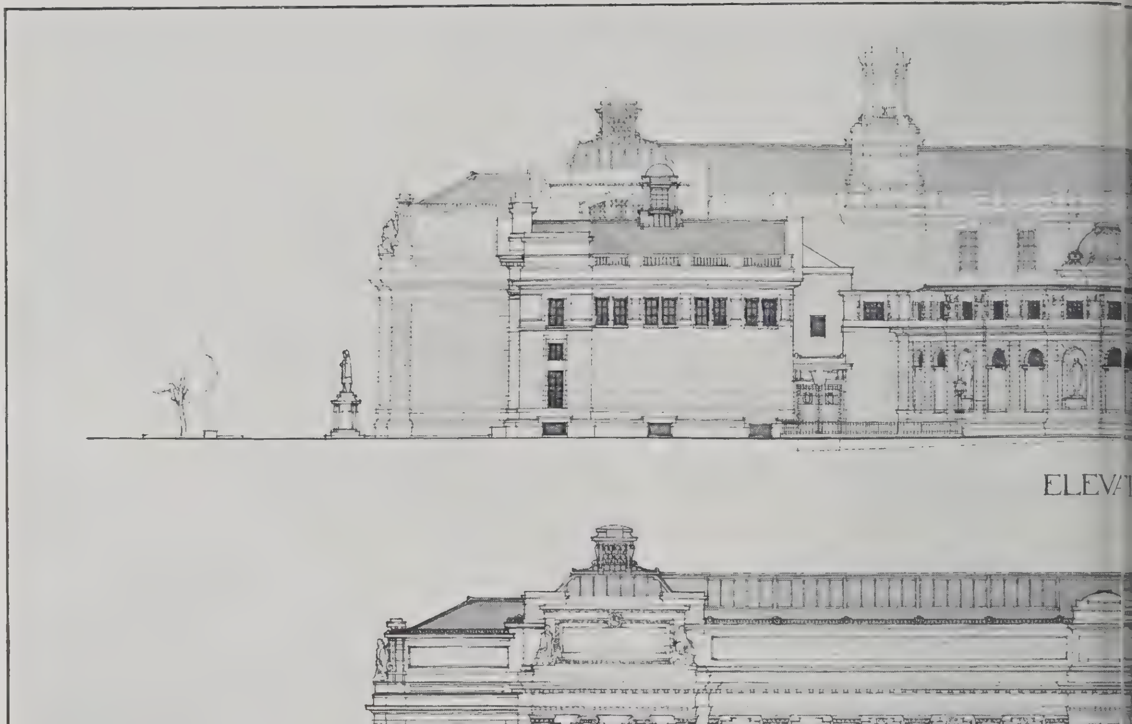
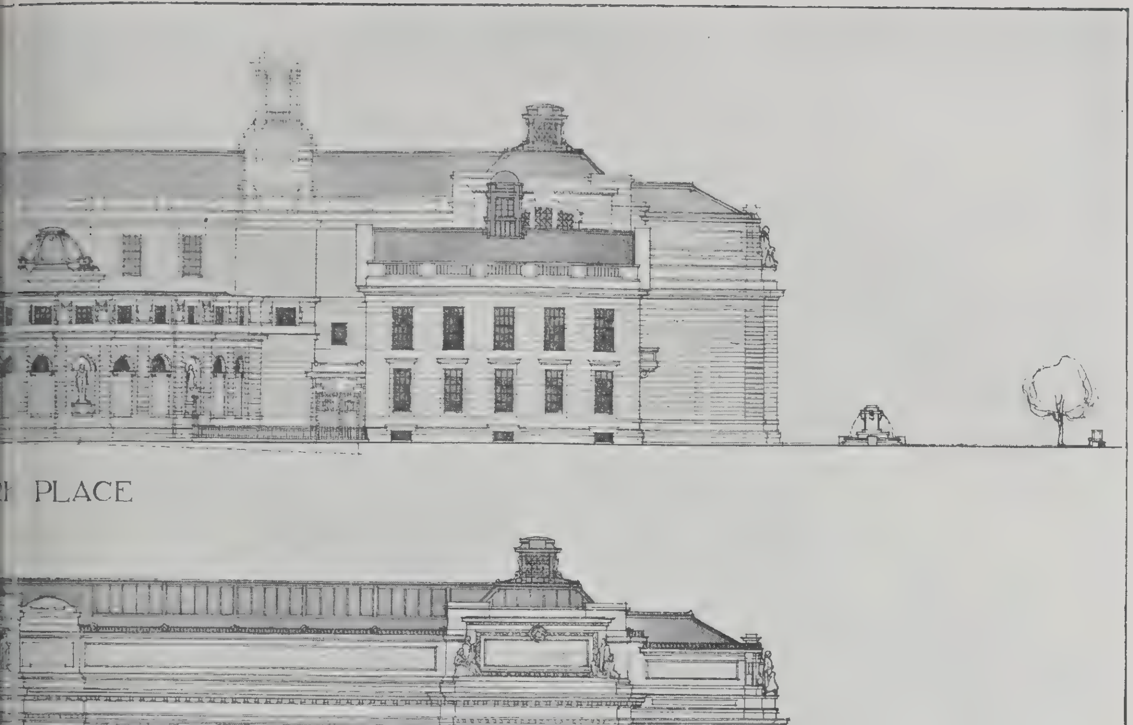
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, November* 1st, 1911.



DESIGN FOR THE NATIONAL MUSEUM OF WALES, CATHAYS



EXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A., ARCHITECT.

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THE ARCHITECTS' &
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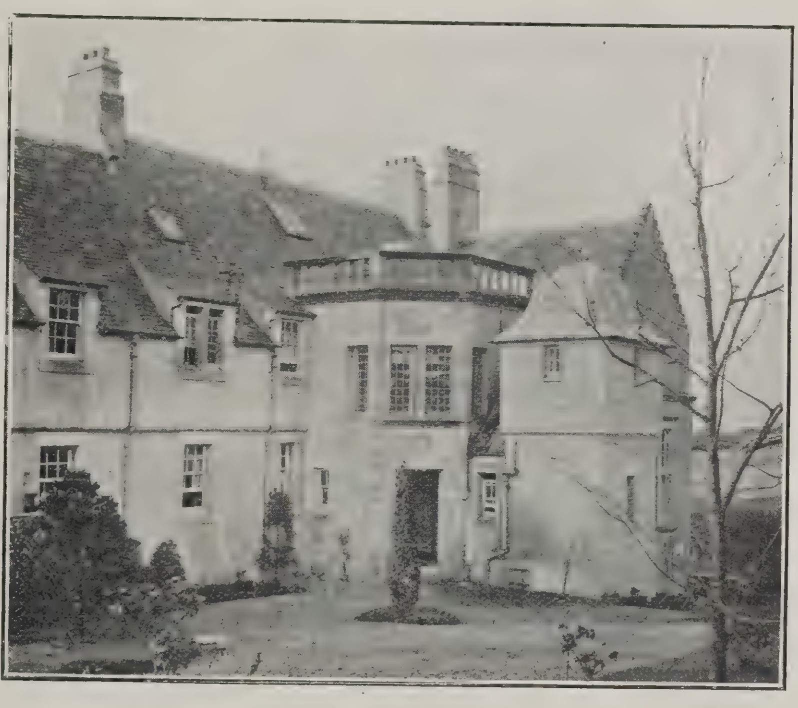
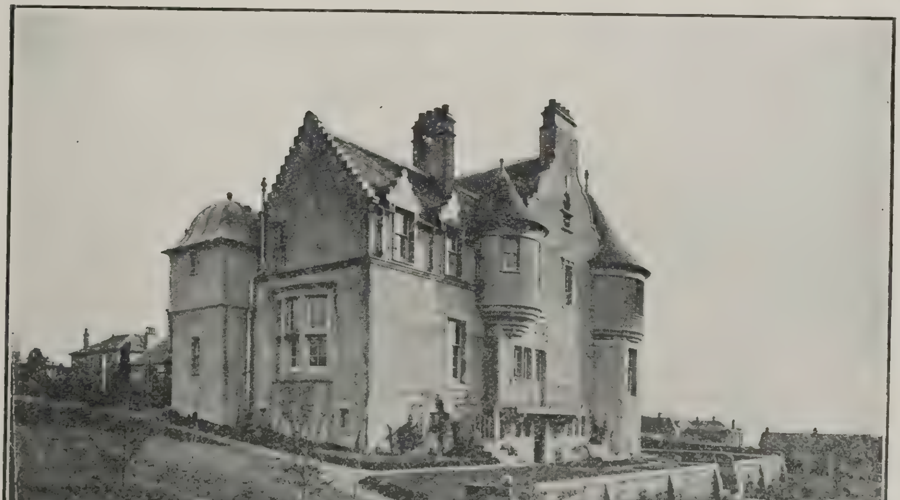
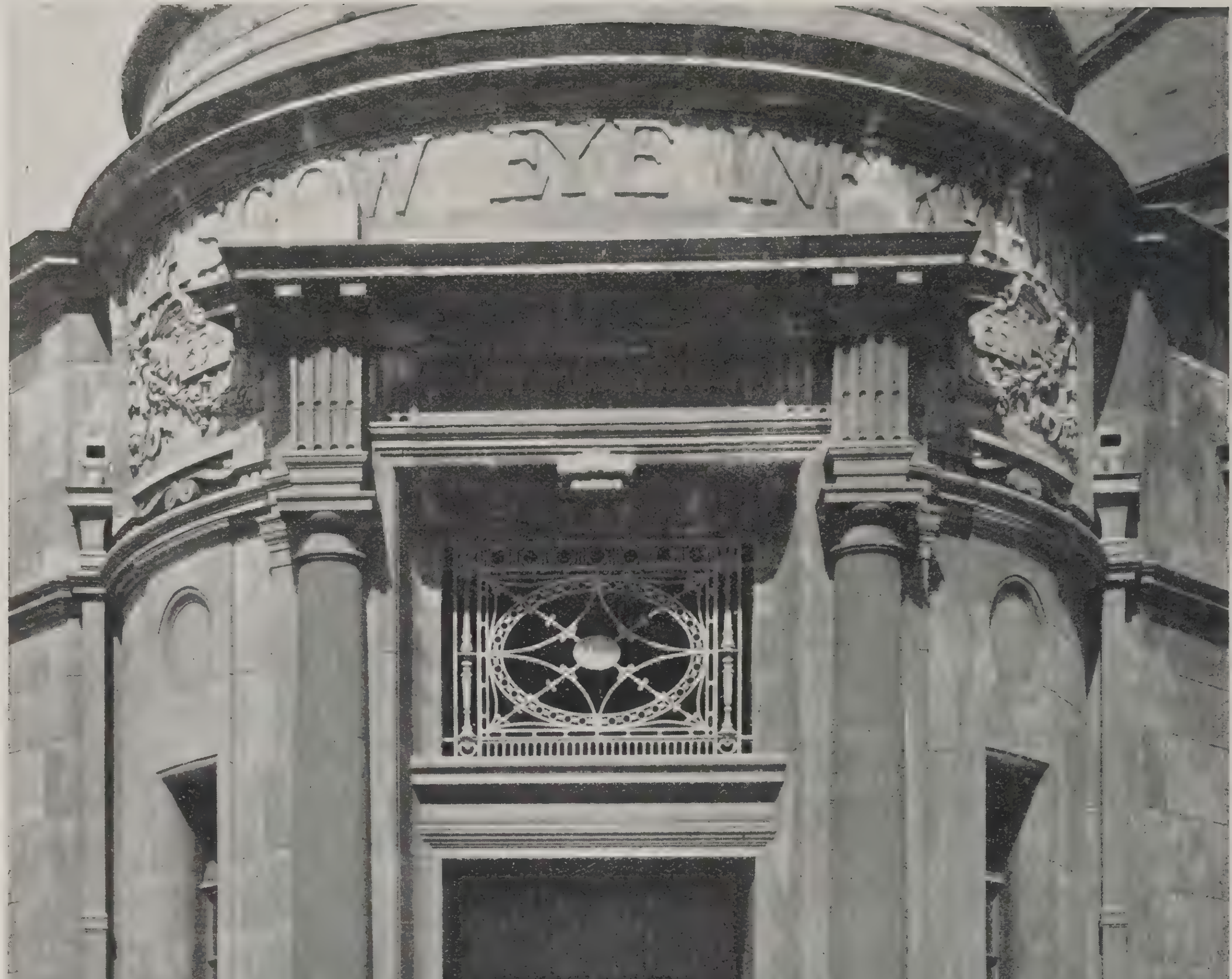
WEDNESDAY,
NOVEMBER 1st, 1911.

Volume XXXIV. No. 875





"LONG CROFT," HELENSBURGH, N.B.
ALEXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A., ARCHITECT



EYE INFIRMARY DISPENSARY, CHARLOTTE STREET, GLASGOW: PATIENTS' ENTRANCE.
ALEXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A., ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

NOVEMBER 1st, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 875.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

Changes in the Institute Examinations.

THE whole problem of examinations in architecture is beset with difficulties, owing to the dual nature of the subject. An examination in law or medicine means an examination in practical knowledge of the subjects concerned. It does not, it is true, distinguish between the man who will become a great cian or a great lawyer, and the men who will merely on and make a respectable livelihood in the ordinary e; those distinctions evolve themselves subsequently; t ensures that each candidate has the requisite scientific gal knowledge to form a basis for the practice of his pro- on. In the case of architecture the problem is complicated e fact that architecture, to be worth anything, is an art; n art which requires a good deal of technical knowledge basis. One can always examine in technical knowledge, a definite result; one cannot examine in art with any inty that the highest marks mean the best artist, or even a man of original genius may not have been among the ccessful ones, since judgment about artistic design is not lible, and can be brought to no certain test. Wren, as ung man, would probably have passed the technical cts of the Institute curriculum with flying colours, but ould very likely have been ploughed in design, since he no draughtsman, and there was nothing to indicate that r special and then unexpected circumstances he would it such a power of architectural planning and composition. any men who are interested in architectural education have so strongly this difficulty about examining in art that they either been opposed to all examination in architecture, or maintained that the Institute examination should be con- l to an examination in competent technical knowledge, ing art to evolve itself. Then of course comes the retort you are thereby encouraging the idea that architecture is re matter of construction and technical practice, and not rt at all. That was the whole ground of dispute, and very y will be still (for we do not believe the quarrel is disposed t all), about the subject of registration. An attempt at a *iscite* of the profession, some little time ago, resulted in replies, as far as they went, being eight in favour of stration for one against; but that protesting one-eighth in- led nearly every architect of artistic fame in the country. y did not wish architectural art to be regarded as a gift, possession of which could be defined by rule.

hat seems to have been the feeling that has been gaining nd in regard to the Institute examinations. The R.I.B.A. rnal publishes the new scheme for the "Intermediate" and nal" examinations which it is proposed to adopt in future, the exception that the existing scheme of "testimonies of ly" will remain as an optional one till January, 1914; rder, no doubt, that those who have been studying with a v to the existing scheme may not be unfairly treated by a one being sprung on them suddenly. The new statement refaced by a "note" by Professor Blomfield, which throws t on the objects of the change and the reasons which have to it. He observes that under the methods of examination hitherto in practice, "real hardships had existed for students," which means, we suppose, that men had technically failed who under a better system ought not to have failed. He proceeds:—

> "The hardships were due to the old-fashioned method which they (the examiners) had to administer. Everyone knows the danger of what may be called the accidents of examinations, of the impossible or even unlucky papers which may hit upon the precise quarter of the subject with which the student is not familiar. In any given subject it is probable that not more than two or three per cent. of the candidates know more than the rudiments. They simply have not had the time to master more, and the least dislocation of the routine puts them out of their stride.
>
> The crammer meets this by a careful assortment of isolated facts calculated to catch one or other of any possible questions; but not only is this knowledge of unrelated facts useless in itself, it is positively mischievous in that it deprives the subject of any reasonable interest, and teaches the student to regard the whole of his training for these examinations as a necessary but deplorable evil, to be forgotten directly the occasion for it has passed.
>
> "The result of such a system on the student's outlook on his work is too often disastrous. The type of student-scholar-architect which existed at any rate as late as fifty years ago is disappearing, and the process of degrading the art to a merely mechanical business with a bare minimum of training has made rapid and alarming progress. Thoughtful architects have long been dissatisfied with this condition of affairs, and a serious effort is now made to arrest the evil."

That type of the "student-scholar-architect" which, as Professor Blomfield says, is unhappily dying out, is so in great measure owing to the rush of modern life and the desire in every profession to make money. Daudet seemed to think it was just the same in France, for in one of his latest novels, "l' Immortel," he shows the fashionable young architect refusing to trouble about trying for the "Prix de Rome," and only anxious to invest money in a block of flats of his own building. There are still, however, a few of the younger generation of architects in England who put art before money-making, and there must be some in France, since the Prix de Rome is still contended for. But then in France the Prix de Rome man, though he has to wait, is sure of recognition and employment from the Government sooner or later; but with the young English architect who goes in for artistic distinction it is a mere chance; he may get public employment, but he has little reason to count upon it.

The general object which has been kept in view in the amended form of examination has been to give more scope to individual study in any special direction, and thus to avoid that mere general getting up of facts which affords the opportunity for the exercise of the crammer's very doubtful vocation; to endeavour to practically ask the student not, how many things do you know? but, what can you do? and to recall the student's attention to design and draughtsmanship, "which have been rather left out in the cold in recent years." It has been felt that the standard reached in the Institute examinations has been lower than it should be, and that yet it was impossible, in Professor Blomfield's words, "to tighten it up all round," the practice of modern architecture being so complex that a student might spend his whole life in a vain attempt to master all of the special subjects which in one way and another come within the range of modern architecture. The two main objects, therefore, are to give design a more important place, to give opportunity to elicit evidence of individual work and thought on the part of the candidate, and thus "to free the examinations from a cast-iron mechanical routine."

To this end certain requirements in the existing list of "Testimonies of Study" disappear. These are, in the first place, Nos. 4 and 5, sheets of examples of two out of three periods of Gothic architecture, accompanied by a concise description of the building or buildings from which the subjects were taken, with dates, sketches of plan, and other information. Of No. 3, details of classic ornament from the round, and No. 6, free-hand drawings of mediæval ornament from the round, one will disappear; that is to say, they will be optional, and we take that to mean that they will be regarded mainly as examples of drawing. To get rid of these, we may observe (this is our own comment), is to get rid of inculcating from the first the idea that architecture means a collection of styles; an idea which is far too prominent in the public mind, and ought at all events to be eliminated from the education of architects. But No. 1, which requires drawings, with details, of two out of the three leading Classic orders, is retained, and rightly; for the Classic orders stand in a different position from any other historical styles. In the first place, they are in a sense the foundation of all civilised architecture since the great Greek period; Romanesque and Gothic, as well as Renaissance, are directly descended from them; and secondly, they afford, beyond anything else, a training for the eye in regard to proportion and scale in details. And we do not see why the requirement should be confined to two out of the three Classic orders; it is not too much to demand that a student should properly understand the Doric, Ionic, and Corinthian orders.

The other three Testimonies of Study which are retained are No. 7, a diagram of a roof-truss, with notes as to the strains in each portion; No. 8, a sheet of the construction of a floor of framed timber, combined iron and timber, and fire-resisting materials, for a room 30 ft. by 20; and No. 9, details of joiners' work in doors and windows. We should suggest that a fourth requirement might be added to these, a statement of the conditions required to ensure a solid and safe foundation in different soils and under different circumstances; for a good foundation is, literally and figuratively, at the bottom of everything in building. Those requirements together would show how far the student knew how to found, to floor, and to roof a building; which are the three important factors in building.

What is substituted, in the Intermediate examination, for the above-named omissions in the Testimonies of Study, is a set of sheets of measured drawings of a building, with the plottings and sketches. In the time table the history papers on Classic, Mediæval, and Renaissance architecture disappear, retaining only that on "the general history of architecture and the purpose of features in relation to the buildings in which they occur"; and for this a whole day's sitting is given. On the second day, besides some constructional papers, the candidate must select one out of four historical periods, and show his knowledge of it; this gives the opportunity to a candidate who has given, or intends to give, his attention principally to some one period of architecture. In the Final examination the existing Testimonies of Study (see pages 400-401 of the current Calendar), are entirely eliminated, and in their place is substituted the presentation of four designs in answer to at least four of the alternative problems of design to be set by the Board of Architectural Education, which will be published every two months in the *Journal* of the Institute. Thus this gives a great deal more prominence to powers of design in the Testimonies of Study. In the time-table "The Principles of architecture: their theory and application," we are glad to find, disappears; no word has given rise to more waste of time and scribbling than that blessed word "Principles," which may be made to mean anything or nothing. The examination in practical subjects seems to be rather reduced in dimensions in the new scheme; but an important addit is made which is worth quoting in full, as its exact intent can hardly be understood otherwise:—

> "(F) The Candidate must submit a thesis showing advan and individual work in one only of the followi subjects:—
>
> 1. Historical Architecture—implying as far as possi the direct study of actual historical buildings.
> 2. Science, as applied to Building.—By this is intend a special study of an application of science to defin problems of building.
> 3. Design including Decoration—such as a study Civic, Mounmental, Decorative, or other branch Architectural Design.
>
> The subject selected for the thesis is to be no fied for the approval of the Board four mont before the date of the Examination, and the the itself is to be submitted four weeks before the sar date. The thesis, which may be either an illu trated essay or a design with a detailed repo will be assessed by Examiners specially appoint for the purpose, who will also examine the can date orally in his thesis. It is open to candidat to obtain distinction in the advanced work, su special distinction to appear in the Kalendar."

It is suggested that this would be to a candidate "a fi and enjoyable exercise summing up his whole student career, and giving him a chance of distinction which the Institu would always recognise. According to Professor Blomfield prefatory Note, "The only fair and reasonable course is insist on a minimum of technical knowledge in building co struction, mechanics, mathematics, and history, and allo the student to make up his marks with one or other of t special subjects offered to his choice."

We feel quite in sympathy with that view, regarding arch tecture as essentially an art. But there are two sides to i One of the arguments that has often been used in favour c the establishment of an examination was, that the safety c the public was concerned in preventing incompetent peopl from overseeing the erection of buildings; that to establis an examination in building knowledge as a condition c membership of the Institute was to assure the public tha every member of the Institute could be safely entrusted wit building operations; and that architectural art might be le to be assessed by the educated public, just as in the case o sculpture and painting, where people discover by degrees tha one artist has more genius than his fellows. The opposit argument is that the Institute ought to promote good desig as well as good construction. The difficulty is that technica knowledge can be examined and judged with certainty; student knows a thing or he does not know it; but that meri in artistic design cannot be judged with certainty; it is to great extent a matter of opinion, not of proof. Tha criticism, that you cannot examine for proficiency in art, wil always remain. But on the whole it is better that this diffi culty should be faced, than that membership of the leadin architectural body should be confined merely to technica knowledge, without attempting to set up any standard o artistic merit. It would be a kind of admission that art wa of no consequence in architecture, provided you build soundly and that would never do. After all, it may be said competitive examination in architectural design is carried out with apparently complete success in France; but in that case it is for honour only, and voluntary; no one is obliged to compete for the Prix de Rome if he does not think it worth while. In the case of the Institute examinations the competition is practically for the right to be recognised as an architect at all; and the question might be put (and it would be a difficult one to answer): "If a man has proved his capacity to deal technically with building, what right have you to refuse him recognition as an architect because you do not like his designs?"

However, we have no doubt that the new scheme will render the examinations more interesting, and give a stimulus to architectural design.

An Essential Branch of an Architect's Profession.

UNDER this title Mr. G. R. Farrow, Associate of the Institute, writes a letter in the current issue of the Institute *Journal* which deserves consideration, on the ıportance of architects giving some special attention to ırniture design. He observes that the reason why furnishers and decorators" are frequently called in to com- ete the internal decoration of a house is that architects e not generally supposed to have given much attention to is kind of design, and argues that there is at present too uch excuse for this idea on the part of the public. This is ırdly the case, for a great deal of good furniture is designed architects, as we have reason to know every time there is an hibition of the Arts and Crafts Society; and we suspect at one reason why an owner does not go to the architect ıo has built his house to design the furniture for it is, very equently, an idea of economy, and that he will get it more eaply from a furniture firm than by asking the architect r designs. It is true, however, that the subject of furniture sign is not sufficiently considered by architects as a part of eir work, and has not been brought much into notice as ch by the Institute; and Mr. Farrow's suggestion that the stitute should occasionally make furniture design a part of work asked for from their students, or should offer prizes r it, is well worth consideration. Furniture is, in fact, a ıd of architecture on a small scale, and attention to it ould be encouraged by the Institute in some suitable manner.

The Architecture of the Incas.

HE discovery of an Inca city in Peru, as reported last week to the Royal Geographical Society by the Yale University expedition, may possibly throw some much- eded light on the history of an ancient civilization of which angely little is known. The character of the newly found ns confirms the impression that the Incas were excellent sons; the stonework being described as finely worked, with ıct angles. Inca architecture, so far as it is known, has in some of the elements of nobility, and the city of Cuzco, ere the most interesting remains are found, offers one of the liest instances of systematic town-planning. When, in vember, 1533, Francisco Pizarro entered the city, he found t it comprised long straight streets, forming right angles h each other, and finely paved. A great central open ıare, called Huacapata, was surrounded by vast temples and aces. The three small streams which pass through the city e confined between walls of fine masonry, and covered by dges built of large slabs of stone laid horizontally. Fine aces led to beautiful gardens, and there are traces of the stence of what must have been very fine parks. Enormous sses of the old masonry, cut and fitted with extreme pre- on, still line the narrow streets. To connect the extremes their enormous territory, they built a splendid system of itary roads, usually constructed of large stones, carefully ed, and lined on each side with larger stones placed on edge. fessor Bingham, the leader of the Yale University expedi- ı reporting the discovery, declares that the newly found ıework is as fine as any in Cuzco or Ollantaytambo. The t important remains at Ollantaytambo are those of three at fortresses, the chief of which has walls about 25 ft. high, lt of rough stones stuccoed inside and out. Within the ls are buildings showing a series of immense blocks of phyry perfectly cut and finely polished, one of them being ft. high, 5 ft. wide, and 2 ft. thick. The Incas were cquainted with the arch, but nevertheless constructed dome 'beehive" roofs. The interiors of the temples of these worshippers, who were also skilled metal-workers, were ered with plates of gold. It may be remembered that in ember, 1909, Mr. C. Reginald Enock, F.R.G.S., read a t interesting paper to the Architectural Association on ıe Architecture of the Incas of Peru," of which an abstract given in this Journal of November 24th, 1909.

Fireproofing from an American Point of View.

AT a meeting of the Concrete Institute at Denison House on Thursday last a lecture on "Fireproofing" was given by Mr. Richard Humphrey, of Philadelphia, President of the American National Association of Cement Users, who said it seemed an odd thing that an American should address an English audience on the subject, seeing that the losses of property by fire were far larger in the United States than in England; but that was partly because the conditions were different, and at any rate American experience might be of use to them. American losses had been much swollen by the large employment of "frame houses" (timber structures) in towns, eighty-five per cent. of the buildings destroyed in the San Francisco fire having been of this class; and where old buildings of this class still existed among the modern fire-resisting buildings they assisted the spread of fire; but they were now getting superseded owing to the cheapness of concrete and the increasing scarcity of what the Americans call "lumber." Objecting to the delusive term "fire-proof" (which apparently still prevails in America, though we have shaken it off here), he complained that the condition of things in his country was that the buildings were mostly bad in fire-resisting qualities to begin with, and that the provision for extinguishing fires was inadequate and costly, leading again to a heavy tax on the building-owner in the shape of high insurance rates. Building laws are being revised in America to meet these conditions, but they are not retrospective. A large number of exceedingly interesting slides showed how in many instances stone supports had lost all their structural force at an early period of a fire, and granite was even worse; moreover, as some other photographs showed, stone used in a decorative manner, though it might retain its place in a fire, was so thoroughly ruined in appearance that it might as well have fallen, for there was no alternative but to remove it and build afresh. Mr. Humphrey, however, made one important statement in regard to stone—that from his observation it depended very much on how stone was quarried whether it would withstand the action of fire for a greater or less time; we should have liked to hear a little more detailed information on this point. An interesting incident was mentioned where a builder, in putting up hollow cast-iron columns in a building, had filled in the interior with concrete; on a fire taking place the iron columns cracked off, but the concrete core supported the superstructure. Terra-cotta slabs as a defence to steel stanchions Mr. Humphrey characterised as very unreliable; the terra-cotta twisted and expanded with the heat, and as the vertical weight prevented the slabs expanding upwards they expanded lengthways, with the result that the construction opened at the angles and exposed the steel; and if, as was sometimes the case, the terra-cotta was further protected by plaster, its movement drove off the plaster. The plaster in that case is, of course, put on to protect the terra-cotta; we have been accustomed to think here that a coat of plaster is a very good fire-resister for a considerable time at least; Mr. Humphrey, however, condemned it as a covering, according to his experience, likely to be itself soon stripped off by fire. Another danger in connection with terra-cotta slab protection, which left a certain amount of space not filled up by the steel work, was that service pipes were often concealed there, the expansion of which by heat tends additionally to burst out the protecting coating; accordingly the American building regulations forbade the placing of pipes in that position, but it was a regulation often evaded.

One of the dangers of fire, Mr. Humphrey continued, both in England and America, lay often in the contents of warehouses, in the concentration of a great quantity of inflammable material, and in many cases the material contained in a building constituted the greater part of its value. In such cases concrete construction was likely to play an important part in the future for fire-resisting buildings. This in fact was thought so much of in America that in a large proportion of cases in which the building was of concrete, the owners did not think it worth while to insure the building at all, but only insured its contents, considering that these might be burned but the building left practically intact. Concrete buildings were regarded as economical, not only in first cost, but because they required less expenditure in maintenance than others. He was of opinion, however, that concrete itself required protecting. After the discussion he explained this further by saying that an exterior casing of cinder concrete was helpful in this respect; he also suggested (what we should feel rather doubtful of) that slabs of limestone formed a good protection to the concrete, provided their outer surface was protected from actual contact with the fire by a plaster covering. This seems rather problematical, inasmuch as the lecturer had already suggested that fire would disintegrate a plaster covering by drying all the water out of it. He also emphasised the importance of seeing that there were no small projections from the steel work, such as clips, left to project too near the outer surface of the concrete. He had known cases in which such a projecting piece of steel, little noticeable in itself, had led rust into the steel work and practically destroyed it.

Mr. Sachs, in proposing a well-merited vote of thanks to the lecturer, agreed with him that terra-cotta could not be depended on except as a merely temporary protection; concrete was the best protector; but to protect large beams at least two inches thickness of concrete was requisite. In France and Belgium the concrete protection was often quite inadequate; sometimes only half an inch thick. It was also necessary to look carefully to the position and structure of internal windows; he mentioned a case in which a disconnecting wall which was quite adequate in itself was rendered nugatory by a number of small windows filled only with ordinary glass, not even reinforced glass. Among the things we had to thank America for were wired glass and better floors; but he claimed that in England we pay much more attention to the saving of life, in case of fire, by adequate exits and exit doors. Mr. Etchells, in the course of the discussion, remarked that the real danger of destruction by fire lay much less in the building than in its contents and the heat set up internally by their combustion, pointing out that even with a temperature of 500 deg. Fahrenheit steel had already lost 15 per cent. of its strength. Another speaker in the discussion maintained that protective concrete should be not less than 3 inches thick, and should be made with a small aggregate, not more than half-inch pieces, as being closer in texture and less permeable, and recommended that hollow columns should always be filled in with concrete, and all the better if the filling had a steel reinforcement down the centre.

The meeting was a most interesting and instructive one, especially on account of the large collection of lantern slides with which Mr. Humphrey illustrated his remarks.

Costly Building Disputes.

THE case of Minter v. Waldstein, in which, as we duly reported, Mr. Muir Mackenzie gave judgment last week, almost establishes a record in the annals of building cases. A building dispute nearly always lasts a considerable time, but the case in question required thirty-nine days for its determination. The plaintiff, who is the well-known builder, sought to recover a sum of about £3,000 alleged to be due to him in respect of work done at the defendant's mansion, Newton Hall, near Cambridge. The defendant counterclaimed on the usual pleas. The plaintiffs had judgment on the claim for £2,750 and costs; the defendant was awarded £2,116 14s. and costs on his counterclaim; but as the plaintiff had a counterclaim to the counterclaim, in respect of which he obtained £533, he was entitled to £1,166 5s. 9d. on a balance. The plaintiffs therefore had the best of it. It is understood that an appeal
is pending, so comment would be inappropriate.
what a vista of costs does litigation of this kind open
We have, of course, no knowledge from within; but the
could hardly have cost less than £50 a day. A simple
in arithmetic shows that, assuming the burden is equ
shared, each litigant will have to pay his lawyer at l
£975! It is an old saying that, whereas the parties
suit come off with the shells, the lawyers get the oyster. Ne
theless, it seems to pass the wit of man to devise any sch
whereby costs can be materially reduced. Given a determi
plaintiff and an equally determined defendant, there is
short cut to an early or an inexpensive judgment.

"Building Trade Trials"

UNDER this heading the "Manchester Daily Dispat
calls attention to the threat of action by the federa
of building trades employees to enforce better condit
of labour in Manchester, and to the perilous condition of
industry in the North: "The fact of the matter is we are p
ing through a period of transition," declared a well-kn
Manchester contractor to a "Daily Dispatch" representa
"It has been bad for a decade now. The whole trade is get
into the hands of specialists, and reinforced concrete, i
etc., are taking the place of stone and timber. Until
movement in this direction has finally 'found' itself the bu
ing trade will be a far from profitable one. The mover
affects all parties—both employer and employee. So far a
are concerned the new theories of construction are respon
for keener competition in all parts of the country, and in M
chester work is handicapped in other directions by the l
number of empty shops and houses. The result is th
cutting competition. New methods mean less work for
old type of mason and bricklayer, and further, the labou
position is gradually being made worse by the fact that
new inventions mean employment for unskilled labour in p
of skilled labour as formerly. Therefore the operatives
whole are in a worse position." We hinted at this stat
things last week, in an editorial note on labour mover
in the London trade, when it was also pointed out th
demand by the operatives for higher wages and shorter h
could only aggravate the evils here enumerated.

The Prude and the Nude.

DEAR old Mrs. Grundy has had another shock. It app
that some of the figures on a new block of office bu
ings in the City of London show bare legs. The l
lords of the new buildings are the Worshipful Compan
Vintners, and to them some horrified member of the
munity has addressed an anguished protest. He received
following laconic reply: "My Dear Sir,—I beg to point
that we are the Vintners' Company, not the Drapers'
pany." The figures, it appears, represent Commerce
Science, and are reported as being "quite respectably
except as to the legs." But, as an official of the firm re
the offices sorrowfully remarked, "Some people are r
satisfied, and would like to drape even bare legs." Quit
If Commerce and Science had been dressed in walking cost
there might have arisen a Philistine howl of execration i
sculptor had omitted to provide them each with a decent
of gloves, and we now seem to get a glimmering of the re
why the very complete equipment of the statues of Sir Sy
Waterlow includes in each case an umbrella that, from
Philistine point of view, would be highly respectable if
it were practicable. The point of the office-building incid
however, is that while it shows that prudery is chroni
reveals the true corrective—a saving sense of humour—
existing, moreover, in the hall of a City Company, whi
about the last place in which one would expect to find
trace of it; the suavely ironic suggestion that the figure
Commerce and Science might afford the Drapers' Compa
business opportunity being in the best style of answeri

ide according to his prudery. If, however, the whole thing ould turn out to be a cunningly devised fable—and really it ms almost too good to be true—the inference is equally vincing that prudery is at length exciting the wholesome icule which is its best antidote.

The British Schools at Athens and at Rome.

HE annual meeting of the British School at Athens will be held on Tuesday, November 7th, at Burlington House, when the Dean of Westminster will take the ir, and the Director will give an account of the excavations lertaken by the School this year at Phylakopi in Melos. is year the School celebrates its 25th anniversary, and the asion will be marked by a festival dinner to be held on same evening as the annual meeting. Mr. Macmillan, irman of the Managing Committee, will preside. A disguished company, including Lord Morley, will be present, l among the speakers will be the Greek Minister (M. Genlius), the Director of the School (Mr. R. M. Dawkins), fessor Ernest Gardner, Dr. Hogarth, Dr. Walter Leaf, l Sir Laurence Guillemard. The annual meeting of the er School at Rome will take place at Burlington House November 21st. Professor J. S. Reid, chairman of the naging Committee, will preside. In connection with this eting there will be an exhibition of students' work.

The Dials of St. Giles.

A SUB-COMMITTEE of the Plans and Works Committee of Edinburgh Town Council have had under consideration a representation by the City Superinten t of Works as to the clock in St. Giles's Cathedral, which early 200 years old. The sub-committee were of opinion t there was not much need of a clock at St. Giles's with in the Tron Church steeple. They are, however, still sidering the continuance of the St. Giles's clock or the tion of a new one, but the view is generally taken that e should be no dials, as these, besides being an anachron on the belfry, mar its architectural beauty. Those to om the stately tower, with its fine "Scottish crown," is iliar are aware that there is no space for dials, and that se that are in position hang over the uppermost windownings as if they had got there fortuitously and were only emporary disfigurement. In 1585 a clock from Lindores ey was placed in the tower, whence it was removed in 1720, ıg then presumably superseded by the present clock. If ommanding tower like that of St. Giles's Cathedral is out dials, one seems to miss them; but any proposal nterfere with the masonry of this fine old tower cannot be strongly deprecated. Yet a clock without dials would be absurdity; and it might be possible to devise projecting s that would in no way disfigure the tower. Edinburgh itects might be worse employed than in an attempt to solve problem. Their sketches would show whether or not proing dials would ruin the appearance of the tower. We rather afraid that this would be the effect, and therefore forward the suggestion with very little confidence. But only alternative to cantilevered dials seems to be no dials ll.

Improving the Calton Hill.

DINBURGH, which is often held up as a model of early town-planning, is not contented to rest on its laurels. There is a scheme afoot to turn the Calton Hill into easure ground, planted and fenced and having a carriage e round about it. The old Observatory on its summit d, it is thought, be conveniently turned into a refresht house. Moreover, it is hoped that funds may be raised the completion of that forlorn fragment of a building h was to have been the Waterloo monument, and in its present abortive state is commonly known as "Edinburgh's Folly," although, in reprisal, it has got for the city the semi-sarcastic title of "the Modern Athens." This piece of the Parthenon, the heavily domed Observatory, and the appallingly unlovely and Low-Country-looking Nelson Monument, make up a sort of Dutch medley which it will take a very skilful town-planner to reduce to anything like harmony. Further monuments and statues are suggested, as if some of those already there, and some of those to be seen thence in Princes Street, had signally failed as a deterring influence as in other respects. A skilful lay-out, upon modern town-planning lines, may possibly "improve" the Calton Hill; but there must be many conservative lovers of Auld Reekie who, for the sake of sentiment, would prefer the hill to retain the bald simplicity it had when R. L. Stevenson was wont to stand upon it and rhapsodise about the Forth and the hills of Fife by day and the lights of Edinburgh by night. But beyond this sentimentality and the embarrassment of the existing buildings, there seems to be no valid reason why the Calton Hill should not be converted from baldness to beauty, and thus lend added grace to Scotland's stately capital.

To Improve the London Mansion House.

THERE is a proposal to improve the Mansion House, more especially the residential portion. Mr. Carl Hentschel, chairman of the General Purposes Committee of the London Corporation, first brought the matter forward, and his proposals have been received sympathetically. Mr. Hentschel holds that the alterations are necessary for the comfort of the Lord Mayor for the time being and for the credit of the City itself. If the City Fathers could be persuaded to agree to this drastic overhauling, it would mean that the Mansion House would be closed for a month or two months to enable the necessary work to be carried out, and this could be done in the summer months. The Mansion House was built 1739-41 at a cost of £71,000. The architect was George Dance, the Clerk of the City's Works. Since 1753 certain alterations have been made, but the lower portions of the house and the residential apartments have never been thoroughly modernised. It is on record that Lord Burlington sent a design by Palladio, which was rejected on the contemptuous enquiry by a Common Councilman, "Who was Palladio? Was he a freeman of the City?" It will also be remembered that the principal room in the Mansion House is named from its more or less exact correspondence with the Egyptian Hall described by Vitruvius. It was not here, but at the old Egyptian Hall in Piccadilly, that in the course of one of his curious lectures to a densely packed assembly, Artemus Ward interpolated the droll remark, "I wish that when the Egyptians built this hall they had not been in such Egyptian darkness about the science of ventilation."

BUILDERS' FOREMEN'S PENSION FUND.

OUR appeal for funds in support of the Pension Fund of the Builders' Foremen's Association still lacks that response which we had hoped. Certain firms have come forward generously, but we feel that many additional donations should be forthcoming from other quarters, and as the annual gathering of the Association is to take place on Saturday next, we trust that there will be an immediate response to this final appeal on behalf of a fund which, as we have already explained, is most worthy of support from all connected with the building trade. The following is the list of subscriptions to date:—

	£	s.	d.
Proprietors of the Architects' and Builders' Journal	£5	0	0
Expanded Metal Company, Ltd.	2	2	0
Trussed Concrete Steel Co., Ltd.	2	2	0
Alfred Whitehead (Leeds)	1	1	0
The Ruberoid Co., Ltd.	1	1	0
G. M. Callender and Co., Ltd.	1	1	0
W.R.	1	1	0

ARCHITECTS OF TO-DAY.

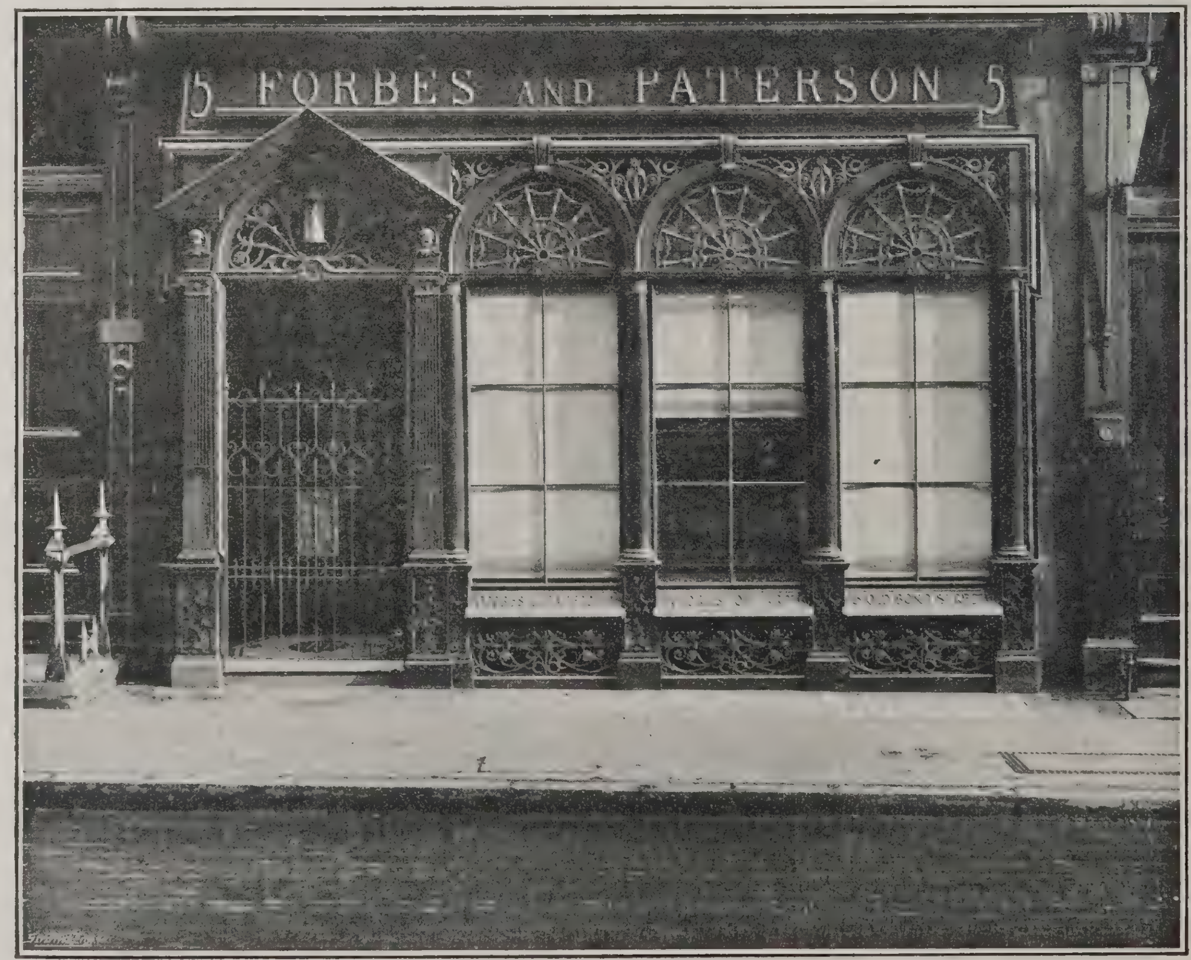
ALEXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A.

THE recent election of Mr. Alexander Nisbet Paterson, F.R.I.B.A., to an Associateship of the Royal Scottish Academy affords us a welcome opportunity of illustrating some of the work of an architect who, as the Academy honour suggests, is indubitably an artist. Indeed, in his exhibits at the Salon, the Royal Academy, and other important exhibitions, he is seen as a water-colour painter not without individuality and distinction; while when occasion requires, he can use the modelling tool to some purpose also.

The claims of his profession, however, can have left him little leisure for the sister arts. Even as a student, he must have toiled ardently. He received his general education at Glasgow Academy and University, graduating M.A. in 1882. Immediately afterwards he went to Paris, where, enrolling himself at the Ecole des Beaux-Arts, he became a pupil of J. L. Pascal for architecture, and of Galland for decorative art. He returned to Glasgow in 1886, whence, after spending several years in the office of Messrs. John Burnet and Son, he came to London, where he was engaged as senior draughtsman first with Mr. R. W. Edis, F.S.A., and afterwards (for a short period, and on special service, in relation to the South Kensington Museum competition) with Mr. (now Sir) Aston Webb, R.A.

During these early years he seized every opportunity of going abroad to study and sketch old work. France, Holland, and Italy, the last for seven months, were visited; and on the conclusion of his London engagement he spent several months on a sketching tour in England and Scotland. In the R.I.B.A. competitions he obtained a Tite medal of merit, and received hon. mention in the Essay competition. Obtaining his A.R.I.B.A. in 1889, he was appointed Godwin Bursar in 1896, and thus was affo further opportunity for travel. On this occasion he we the United States of America, and the fruits of his obs tions there were embodied in a lecture delivered to R.I.B.A., and afterwards separately issued by that bod one of its publications. This was the precursor of papers on architectural subjects which Mr. Paterson has there and elsewhere. As a result of all this travelling, can be no doubt that Mr. Paterson's work has gained mensely in breadth and catholicity. Both in planning a design are shown the resourcefulness and the freedom narrow convention, which can only proceed from a wide well-studied field of observation.

Returning to Glasgow in 1891-2, Mr. Paterson then there began practice on his own account, a practice whic the result of good fortune and energy, soon attained cons able dimensions, as shown by the record of work during period. Twelve years later he entered into par ship with Mr. Campbell Douglas, and generally directe work of the firm of Campbell Douglas and A. N. Pate until the death of Mr. Douglas a year or two ago, when Mr. Paterson remains the sole representative of firm. In addition to much domestic work in the West of land, Mr. Paterson has designed the Eye Infirmary build and the University Press offices, and Messrs. Barr and Stro business premises at Glasgow; Golfhill School, Dennist the National Bank Buildings in St. Enoch Square, and Liberal Club in St. George's Place; and he is at present gaged on the important work of preparing the designs fo remodelling and extension of the Glasgow Royal Excha three shaded monochrome drawings of which were hung a recent exhibition of the Royal Scottish Academy, Edinbu Some interesting ecclesiastical work includes the restoratio Lesmahagow and Yarrow parish churches, and the decora of several others in various parts of the country. He



NO. 5, OLD BOND STREET, LONDON, W. ALEXANDER N. PATERSON, ARCHITECT

MR. ALEXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A.

(Drawn from life by R. B. Paxton.)

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

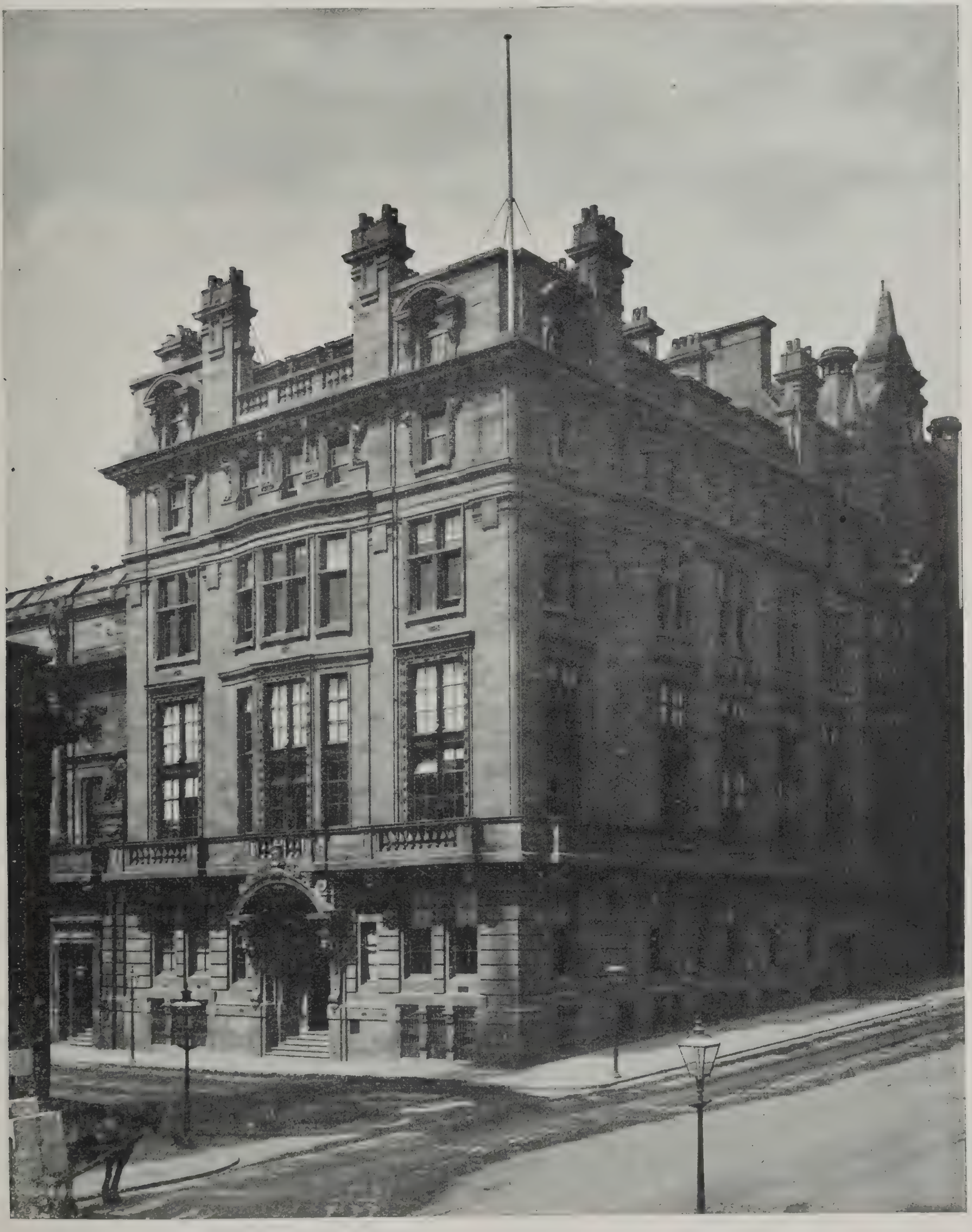
igned public halls for West Kilbride, Ayrshire, with private ıses there and at Mauchline and Prestwick in the same nty; in Edinburgh a pair of boarding-houses for the Edin- gh Academy; in London, the arrangement and interior de- ı of shop and picture-gallery, and of shop-front at 5, Old ıd Street.

n Helensburgh, Dumbartonshire, where Mr. Paterson has ded for many years, examples of his work are to be seen in de Street School and the science and art rooms of Hermi- e School; in the Municipal Buildings extensions; pulpit, choir screen, etc., of the Parish Church; decoration of St. Columba Church, and that of the Vic- a Halls; in a group of houses at the end of Millig Street; The Long Croft, in which he dwells; in "Moorgate," um Millig and "Courtallam," a series of private houses cted for their respective owners. In the same district he pared also the designs for the extensive alterations at Auchendennan; the hotel at Arrochar; and several houses at Row and elsewhere.

Mr. Paterson, who was elected F.R.I.B.A. in 1910, has been for many years a member of Council of the Glasgow Institute, of which he is a Vice-president; he is an artist member of the Glasgow Art Club, and a governor of the School of Art there. He is also actively interested in the Scottish Ecclesiological Society and other similar institutions.

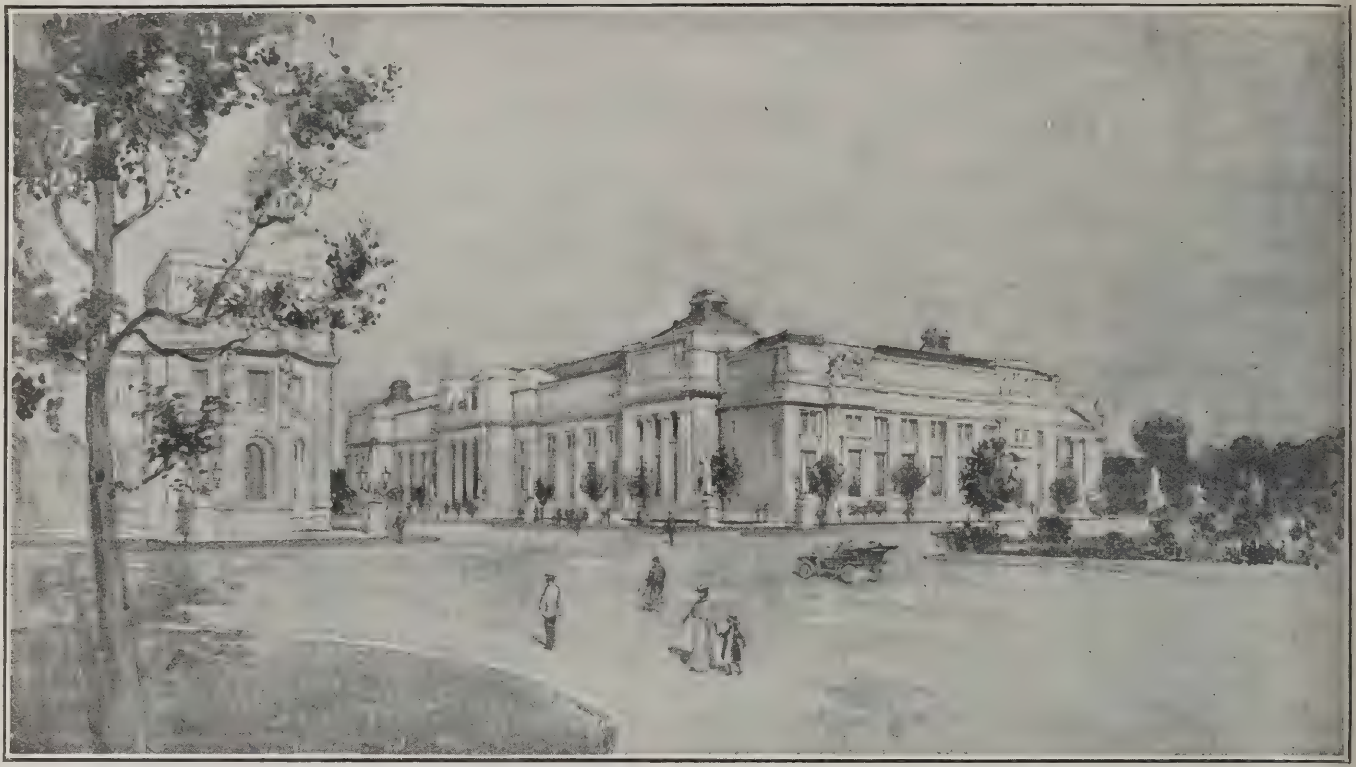
Of the work here illustrated, the shop-front of No. 5, Old Bond Street, London, will serve as a hint of the architect's versatility, as well as of his sympathetic feeling for environment and tradition. It is one of Mr. Paterson's earlier designs.

Clyde Street public school occupies an open site between the sea-beach and one of the principal streets which gives a north frontage. This is therefore devoted to entrances, stairs, and cloakrooms, so as to leave the sunniest aspects for the classrooms, which are grouped around a central hall. The



THE LIBERAL CLUB, ST. GEORGE'S PLACE AND BUCHANAN STREET, GLASGOW.

ALEXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A., ARCHITECT.



PERSPECTIVE OF DESIGN FOR NATIONAL MUSEUM OF WALES, CATHAYS PARK, CARDIFF.

ALEXANDER N. PATERSON, ARCHITECT.

north-east and north-west angles of the site are respectively occupied by a separate building for cookery and laundry classes, and the janitor's house. The walls are of Dalreoch freestone, and the roof is covered with Aberfoyle green slates.

Lesmahagow parish church, Lanarkshire, was originally a plain oblong structure, with gallery all round and flat plaster ceiling. Mr. Paterson removed the ceiling, exposing the timber roof, and he added the apse, new communion-table, pulpit, etc., remodelled the internal furnishings, gallery front, and pews, and reglazed the windows with lattice-work; the whole in a simple form of Renaissance, "in keeping with what there was of architecture in the original building," which was erected in 1802.

The Glasgow Eye Infirmary new buildings were designed to harmonise as far as possible with the old house by Robert Adam, seen in the general view on p. 469. The walls are of white freestone from Giffnock quarry, the pillars flanking the main entrance being of Corsehill red freestone.

The principal branch offices in Glasgow of the National Bank of Scotland were illustrated in our issue for August 24th, 1910. The building occupies a site with a frontage of 46ft. on the west side of St. Enoch Square, and a depth of 83ft. 6in. to a narrow lane at the back. The sculptured figures on the façade symbolise the characteristics of banking—"Prudence" and "Adventure"—and its activities—"Commerce" and "Security." The ground floor is faced with pinkish-red granite, to emphasize the portion of the building used as a bank (the rest being occupied as offices and warehouses), the remainder of the façade being of white freestone. The walls of the banking-hall are panelled in white oak, waxed and dull-polished, banded with mahogany inlay. Over the chimney-piece, which is of green Ellerwater stone, is the bank's coat-of-arms, while surmounting the pediment are amorini typifying "Cash" and "Credit."

The Liberal Club at Glasgow, being an important social and political institution, with more than a thousand members, deserved to be housed in a somewhat imposing manner, and it occupies an important corner site, facing St. George's Place and Buchanan Street. The former being level and comparatively free from traffic, necessitated the placing of the members' entrance there; while the southern aspect and quietne
made it desirable that the principal apartments should face
that direction—hence the special development of the first floc
The site, already too small for the accommodation required,
further restricted on the ground-floor by a right-of-way pa
sage to the buildings behind, the basement and upper floo
continuing under and over it to the full depth of the ground.
the circumstances, it became necessary to bring the main wal
out to the building line, so that this, combined with the loc
by-laws respecting overhang, resulted in the rather flat pr
jection of the bay window. To overcome as much as possib
the undue yet requisite height of the building in relation to i
area, the horizontal members are insisted on as much as po
sible, further assistance in this respect being obtained
carrying through the lines of the basement and main balcor
on the adjoining Athenæum building. The windows of tl
first floor are 20ft. high. Those to St. George's Place, ar
the first two round the corner, give light to the large dinin
room. Beyond that the transom indicates a floor, the low
half of the windows belonging to the private dining ar
private billiard-rooms, and the upper to the card and cor
mittee-rooms in a mezzanine.

It will not be supposed that our illustrations are fully r
presentative of Mr. Paterson's work, but at least they w
serve to show the versatility and resourcefulness that ha
been already mentioned as the notes of a wide outlook and
thorough training on the practical as well as the academic sid
For one who has accomplished so much at a comparative
early age, brilliant use of expanding opportunities may be co
fidently anticipated.

There is a saying that an engineer, like a soldier, should
prepared to go anywhere and do anything, from constructi
a bridge to hemming a handkerchief. Similar resourcefulne
is valuable to the architect. Human limitations forbid eve
a Michelangelo to do all things equally well; but the arch
tect will have a firmer grasp of the lines on which he ma
happen to specialise if, both in training and in practical wor
his experience is sufficiently diversified to give him maste
of principles and of details, and breadth of outlook. As
medicine, so in architecture, it is often the successful gener
practitioner who becomes the most skilful specialist.

NTERNATIONAL CONGRESS OF ARCHITECTS, ROME.

Last week, by the courtesy of Mr. C. Arthur Butler, secretary of the Society Architects, we were enabled to give rtions of the report presented by the ciety's delegate to the Congress, Mr. G. Lovell. The resolution with regard the formation of an international comssion of representatives of countries jected to earthquakes is now given, ether with portions of Mr. Lovell's eresting account of delegates' visits to jects of architectural interest.

nternational Earthquake Commission.

The Congress, in an "extra proposin," begs the Government of Italy to e the initiative in the formation of an ernational commission of representas of countries subjected to earthkes in the following manner: (a) To te all the studies and the works which e been made, and are being made in that concerns earthquakes and also stability of buildings in earthquake ntries; (b) to elaborate general reguons and local regulations for construcns to be built in these countries, and require the representatives of the eign countries present at the ninth gress of architects to ask their respec governments to create seismatic stans, where they do not yet exist. And ask that the earthquake commissions uld be composed not only of learned logists, but of architects and eneers in order that these commissions y, by their work, contribute to the nical and artistic solution of the quesof stability of the constructions in hquake countries.

Places of Architectural Interest.

r. Lovell remarks that in all probaty the delegates learned more outside n within the walls of the Congress , the interest of their visits being atly heightened by the scholarship and dly courtesy of the gentlemen by m, in many instances, they were ompanied.

The Castle of St. Angelo.

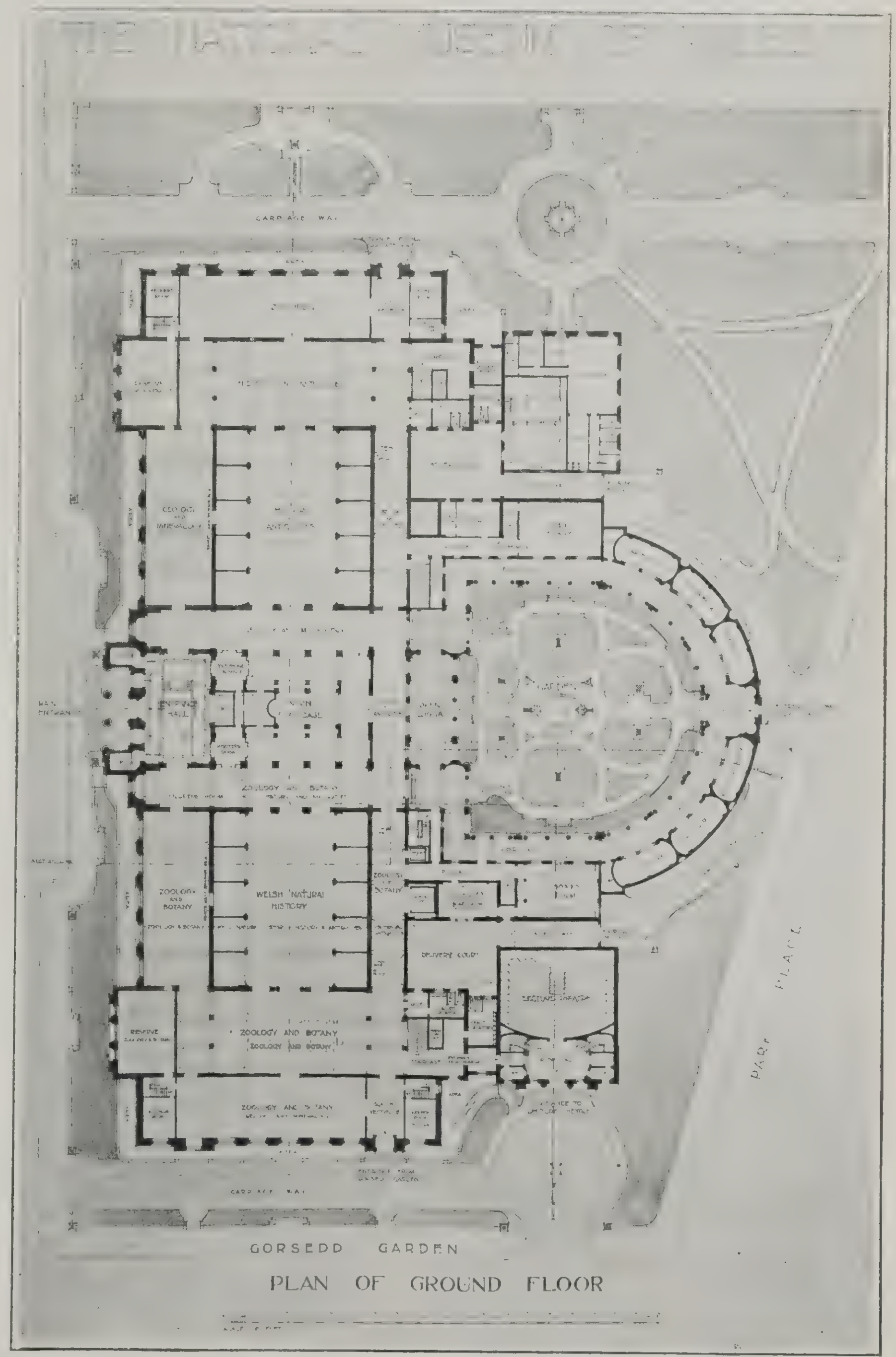
his monument of Imperial Rome ns part of the International Exhibi. The Congress hall and offices are structed in the adjacent grounds. An resting show of retrospective art is on both inside the castle, and in the dings surrounding it. This becomes rely dwarfed by the dominating innces of the towering mass of masonry, structed by the Emperor Hadrian for tomb and for that of his successors. travertine cylinder of 80 yards diaer was originally faced with marble, with columns and entablature surnted by numerous marble statues. Its ent appearance is that of a mediæval ess, and its present name was owed by Pope Gregory the Great in when he beheld the Archangel ael sheathing his sword above the e.

Santa Prisca.

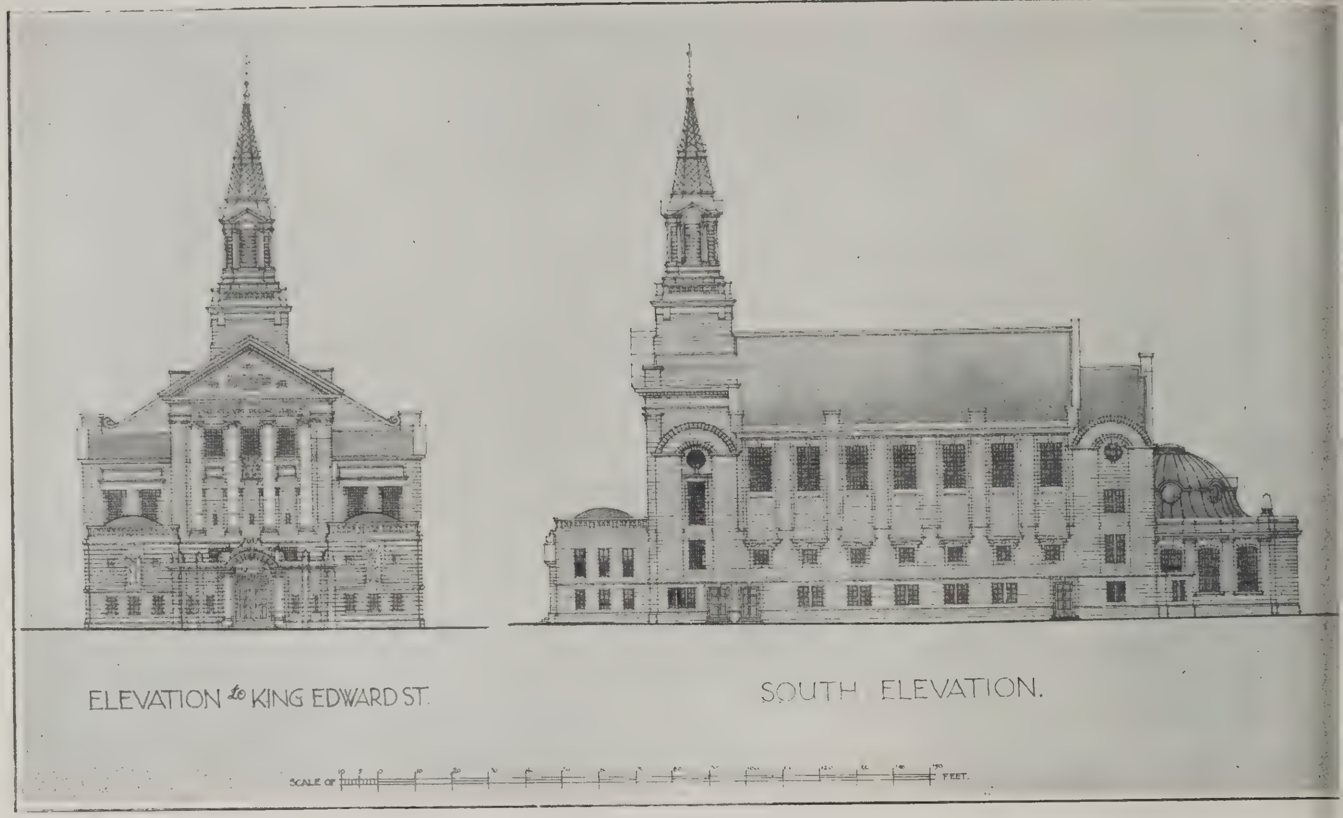
nor Filippo Galassi, one of the Perent Committee, included the Society rchitects' delegate in an invitation to ncheon here, which he offered to Sir ry Tanner, Mr. John Slater, Mr. cutt, Mr. A. E. Murray, and Mr. ry Tanner. Santa Prisca is on the es of the Aventino, with beautiful s on to the ruins of the palaces of the rs on the Palatine Hill, and across and the modern city to the distant ni Mountains. In the valley could be traced the form of the mighty Circus Maximus, greatest of the stadiums of Ancient Rome, first erected in the time of the Tarquin Kings and subsequently enlarged by the Emperors to accommodate more than 200,000 spectators. Mr. Gelassi conducted the party down to inspect the Cloaca Maxima, which was formed (before the time of the rape of the Sabines) to drain the swamp between the Capitol and Palatine Hills, and it is still used to drain a part of the city, and has thus been in more or less active existence for a period of more than 2,600 years. Mr. Gelassi also explained that the ancients only employed the famous long Roman bricks for arch and vault construction. The smaller bricks that are now found in wall construction are only broken pieces.

Victor Emmanuel Monument.

In this great work, designed by Count Sacconi, the bulk of the sculpture, parapets, pedestals, etc., are at present only in plaster. This work has been proceeding since 1885, and it was hurriedly completed in the present temporary manner for the celebrations this year. Many important modifications can therefore be made in the completed work. The main relief on each side of the standing figure of Peace is actually in duplicate, divided into sections and ingeniously hung on internal rails, so that one design can be slid behind the other. By this means the public has the opportunity of judging *in situ* the work of both of the first competitors. The honeysuckle ornament on the highest cornice is as well finished as if it were being used at the eye-level. Many of the party felt that, grand and mighty as the monument appears in mass, greater dignity still might have been obtained if less ornament had been employed in the lower part; and some of the number considered that omission of one or two columns in the colonnade would have improved the spacing and widened the end porticos. Mr. Gelassi was able to show the various models prepared during the progress of the work. The original



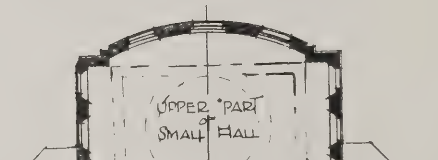
ALEXANDER N. PATERSON, ARCHITECT.
(For Elevations, see Centre Plate.)



one made by Count Sacconi appeared much the most noble. The lower part was heavily rusticated, and with only one centre opening and very little ornamentation. The whole building was three or four metres less in length, with two columns omitted, and consequently wider spacing in the colonnade. The existing modifications became necessary in consequence of an important development when getting out the foundations. The construction is erected on the northern slope of the Capitol Hill, and it was found that what was supposed to be solid rock, only requiring a facing to be fixed, was so honeycombed that it had to be cleared away, and high walls were formed, necessitating the various windows and openings which now exist. For similar reasons the N.E. end had to be extended. While the party were admiring the magnitude of this colossal monument to a great King, a comparison was drawn with the monument erected in London to a great Queen; and while they were bounding over the ruts of the ill-kept streets, another comparison was drawn as to the more utilitarian expenditure of public money in our own country.

The Capitol.

On the invitation of the Syndic, a brilliant reception was held at this historic spot. The three buildings surrounding the antique bronze statue of Marcus Aurelius are at present united at the two angles by wood and plaster constructions, repeating the façades designed by Michelangelo. This enabled the guests to circulate freely between the well-known collections. "One interesting fact," says Mr. Lovell, "was brought home very clearly to us. We found ourselves admiring frescoes and decorative features of the fourteenth and fifteenth centuries on the walls of a building designed by Michelangelo, but not executed until after his death in 1564. This was explained by hearing that his façade had been applied to a mediæval building of the thirteenth century."



DESIGN FOR PERTH CITY HALL.
ALEXANDER N. PATERSON, ARCHITECT.

The Forum of Trajan.

Commendatore Boni, who is the curator, and is in charge of the excavations of the Fori, gave an interesting lecture, with slides, on the Forum of Trajan—the highest development of Roman art. He described his discovery of the gra Trajan at the base of the column, the method he had adopted for mining the exact length of the R foot, 100 ft., representing the heig the column, including the pedestal. also represents the depth of earth ren from between the Quirinal and Capi Hills. Professor Boni has found 27,702 metres represent the exact l of 100 Roman feet, roughly 91 E feet, instead of about 97 English f previously supposed.

Town Planning.

Professor Stübben also gave a le with slides, on town planning, simi the one he gave at the London planning Conference. He describe garden cities of England as the a of domestic work, but claimed th Germany they were making grea vances in the planning of towns.

Palazzo Colonna.

A luncheon was offered by the Or ing Committee to the delegates i Pavilion of Palazzo Colonna, and wards they were escorted throug famous picture galleries and ga Here they saw a fragment of a c architrave believed to have been of the main entrance to the Tem the Sun.

Villa Albani.

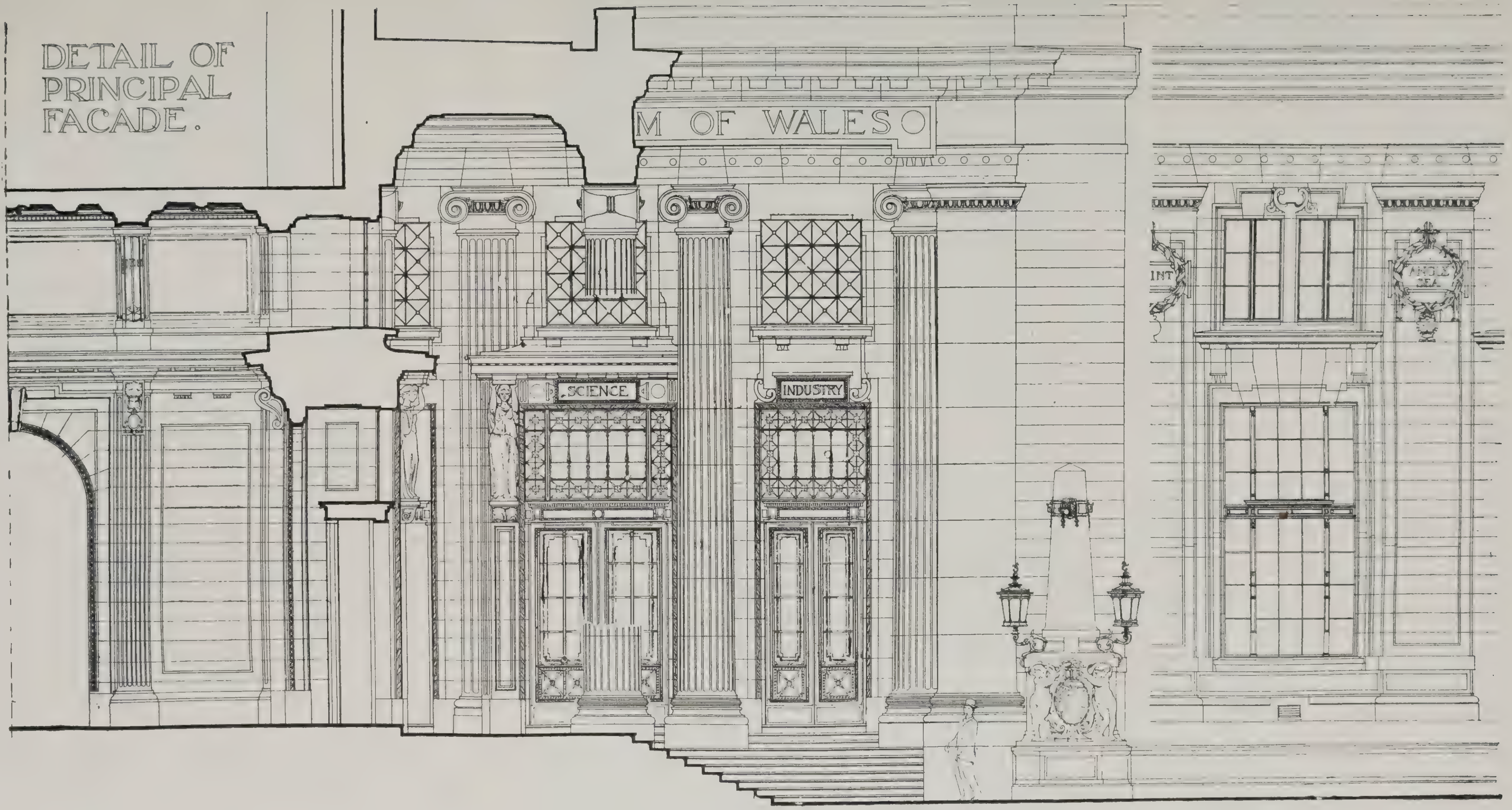
With the permission of Prince lonia, an afternoon reception was in the beautiful gardens and in th leries of antique statuary.

Villa del Vascello.

A delightful garden party was by the Marquis Luigi Medici del Va The view from the tower over Rom the Campagna was most extensive. original villa had been destroyed the French attacked Rome in 1849.

Villa Borghese.

A whole day was spent in and abo beautiful gallery and park, in whi new zoological gardens are inc



DESIGN FOR NATIONAL MUSEUM OF WALES, CATHAYS PARK, CARDIFF. ALEXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A., ARCHITECT.

These certainly are the most realistic in the world. The large animals are not confined in cages, but have an open space allotted to them in which they are free to roam. The back part of this enclosure is formed by wonderfully realistic overhanging rocks, with caves or dens, and interspersed with cacti and other tropical plants; apparently there is nothing but a slight wire fence to confine the animals.

The Ethnographical Exhibition.

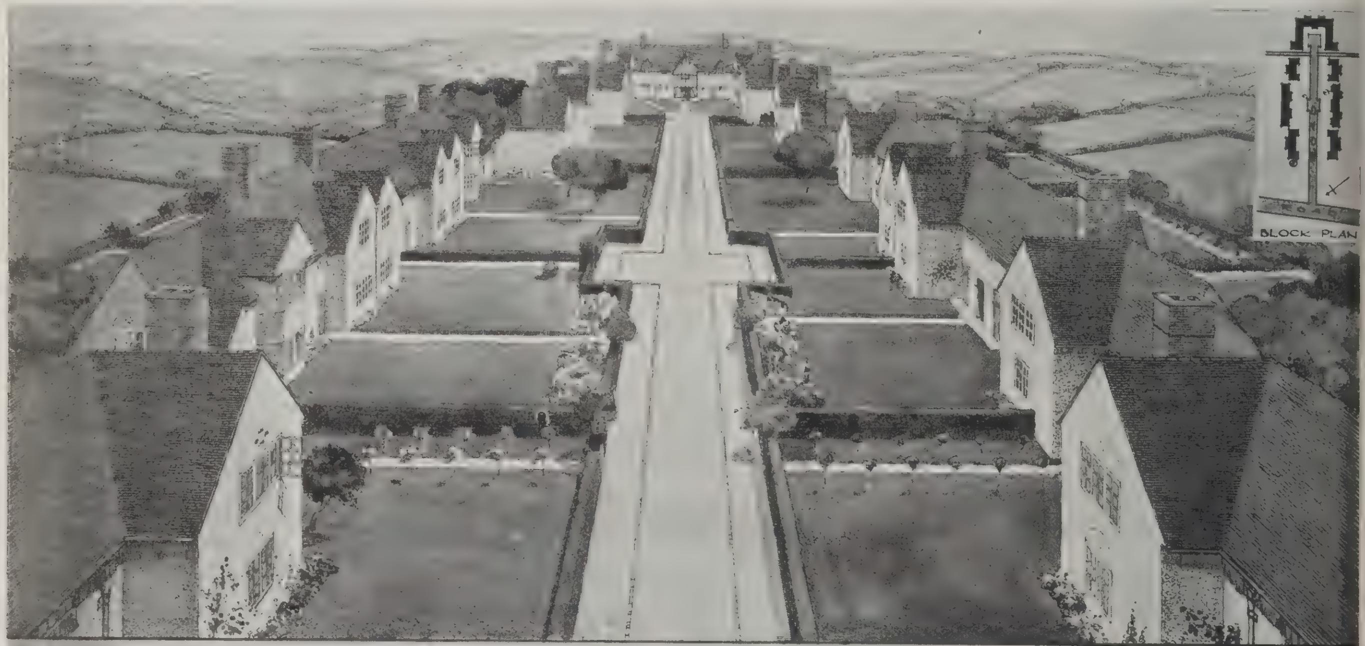
This is a most comprehensive collection of typical buildings of each Italian province, correct in every detail, both inside and out. The architectural student will appreciate the fact that there are gathered together in the Piazza d'Admi samples of all the motifs and details for the discovery of which he would otherwise have to search the whole of Italy.

The Fine Art Exhibition.

It seems to be generally conceded that this is the finest International collection of pictures ever gathered together; and the exhibits of most of the larger countries are housed in buildings specially constructed as typical of the architecture of the particular country represented. The British pavilion is by Mr. E. L. Lutyens, and is founded on the upper storey of St. Paul's Cathedral. It is most gratifying to know that, on all sides, it is admitted that the British collection is by far the best in the exhibition. One is curious to know how such a very excellent and comprehensive collection was gathered together. All phases of British art seem to be represented. The Pre-Raphaelite men form a remarkable gathering. Although the collection, in point of number and quality, surpasses that of any other country, the method of display is entirely eclipsed by the methods shown by Hungary, Germany, and Austria.

Model of Ancient Rome.

This is the work of M. P. Bigot, v has spent seven years in careful st with the foremost archæologists and completing this wonderful reproductio the Imperial City in the fourth cent A.D. It is built to a scale of 1 to and covers an area of about 150 squ yards. Only the centre part of the cit shown, but it is sufficient to include baths of Caracalla on the south to mausoleum of Augustus on the north, a includes the Aventine Hill on the west the Quirinal on the east. Nothing c equal this ambitious work as a means reconstructing the general aspect a topography of the capital of the wo as it was sixteen hundred years a Every detail of historic or architectu interest is shown. After this model been studied, modern Rome takes quite another aspect.



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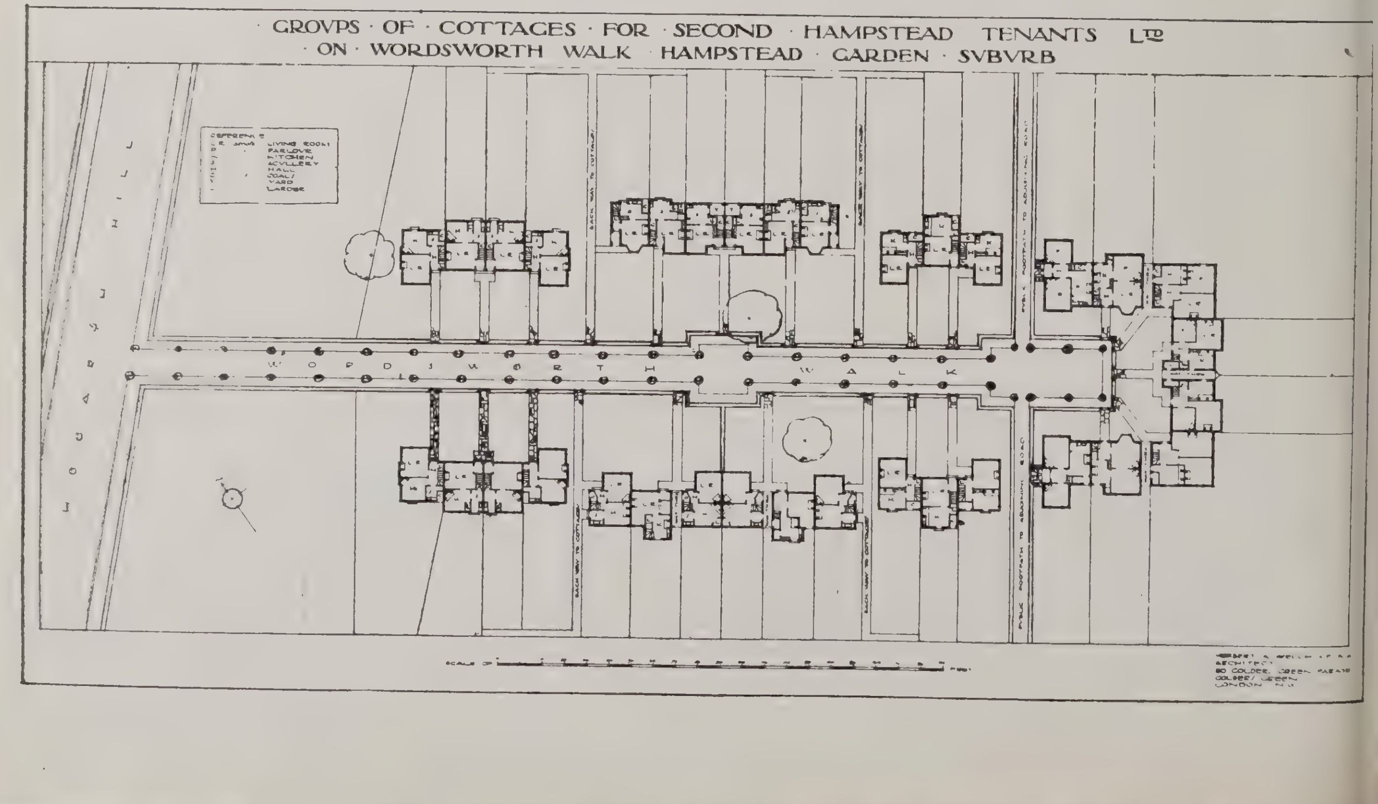
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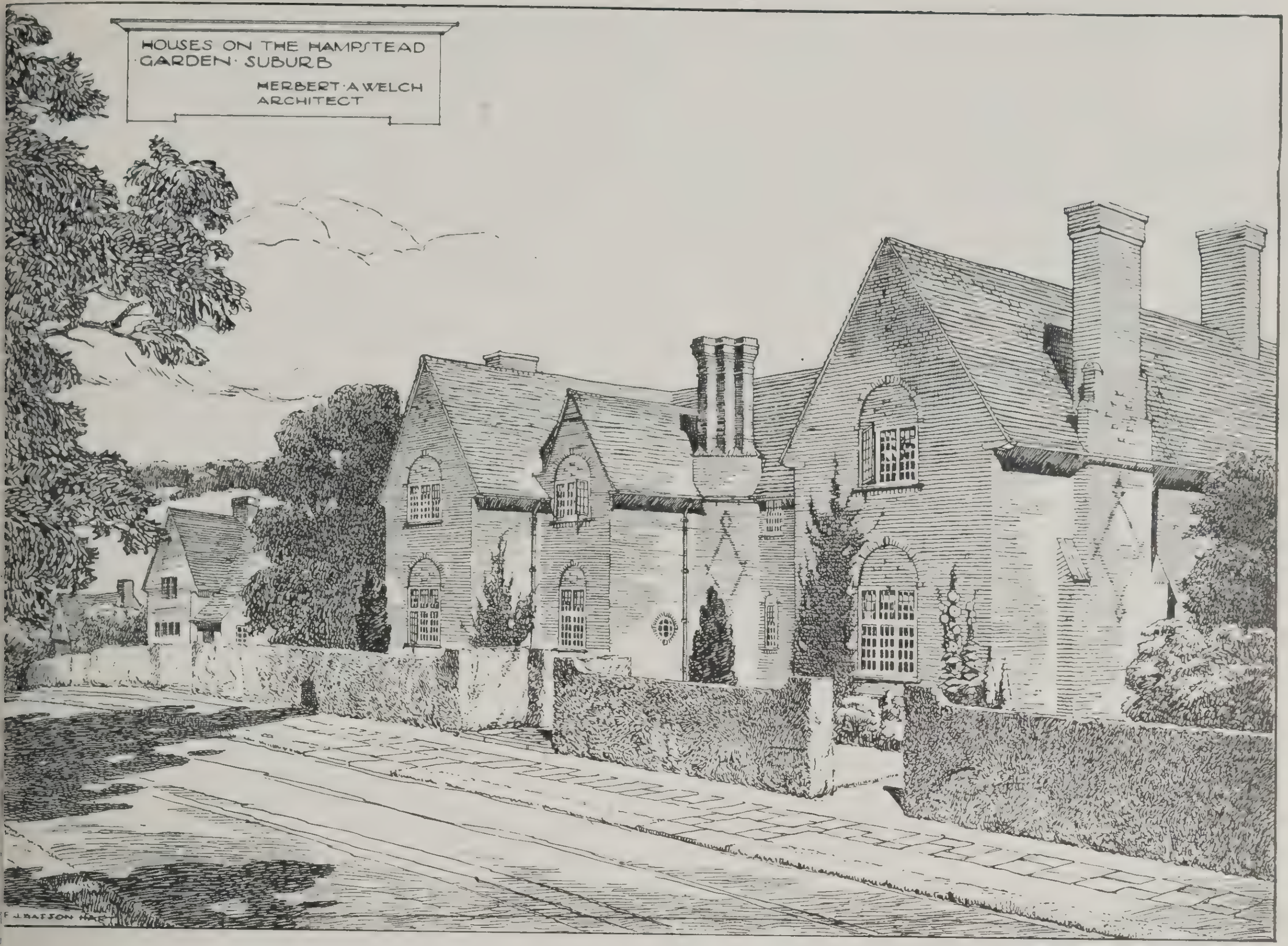

HOUSES ON THE HAMPSTEAD GARDEN · SUBURB
HERBERT · A WELCH ARCHITECT
F J BATSON HAR

ŲSES IN HAMPSTEAD GARDEN SUBURB.

Cottages, Wordsworth Walk.

will be seen from the plans, these
ges occupy the whole of the sites
nd a 20 ft. road, which road has a
age turn at the top end, with exits
ach side to the adjoining main roads
edestrians only.

e accommodation varies from one
g-room and kitchen, with small
ery, and two bedrooms and bath
, to two sitting-rooms to kitchen,
with three bedrooms and bath-room,
they are let at rentals varying from
d 8s. to 13s. 6d. per week.

e materials externally are sand
h-cast, of light straw colour, with
d plinth about 18 in. high. The
ows are casements painted white, and
oors are of a quiet green colour.

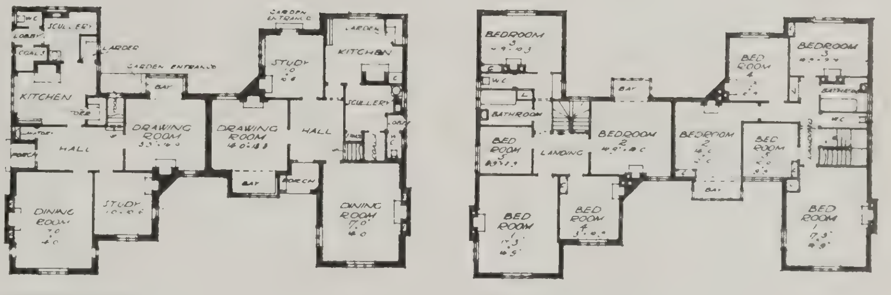
e roofs are covered with red sand-
l tiles, and the chimney stacks are in
and-faced bricks.

e vista at the end of the road has
terminated by a half-timbered gable
ment with a way through to the backs
uses as in all cases of larger groups.

e architect is Mr. Herbert A. Welch,
I.B.A., of 20, Golders Green Parade,
ers Green, N.W., and the builders
he Hampstead Tenants, Ltd.

Houses in the Hampstead Garden Suburb.

ese two houses were so planned in
to take full advantage of the view
the Hampstead Heath extension.
e five of the six sitting-rooms face
oad.



GROUND FLOOR PLAN

FIRST FLOOR PLAN

HOUSES IN THE HAMPSTEAD GARDEN SUBURB. HERBERT A. WELCH, A.R.I.B.A., ARCHITECT.

They are built of hollow walls faced with sand-faced bricks of three colours—brown, red, and purple—with cream mortar joints. The roof is covered with red sand-faced tiles of slightly varied colour. The casements are in wood, painted white, with leaded lights. All internal joinery is deal, painted white—except in kitchen, scullery, etc., which is green. All door and window fittings are in bronze. The drawing was hung at last year's Academy Exhibition. In this case also the architect is Mr. Herbert A. Welch, A.R.I.B.A.

The Light Side of Bricklaying.

At the North London Police Court recently three bricklayers engaged on a building in course of erection at Clarence Place, Hackney, were fined 4s. each for kicking a football about the street during the dinner hour!

UNIVERSITY OF LIVERPOOL SCHOOL OF ARCHITECTURE: SCHOOL OF CIVIC DESIGN.

A syllabus of the town-planning lectures to be delivered during the ensuing session in the Department of Civic Design at the University of Liverpool shows the scope of six courses, which deal respectively with Outlines of Town Planning (Professor Adshead and Mr. Abercrombie); Civic Engineering and Hygiene (Professors Brodie and Hope and Mr. Aman); Civic Law (Mr. Chaloner Dowdall); Civic Architecture (Professor Adshead); Civic Decoration (Professor Adshead); and Parks and Gardens (Mr. Thomas H. Mawson). In each case the syllabus gives the impression of thoroughness as to detail; while, taken as a whole, the subjects seem to be admirably developed and co-ordinated.

"ON REALITY IN MODERN ARCHITECTURE."

Before proceeding with his lecture to students at the Architectural Association, last Monday week, Professor Beresford Pite referred to the leading article of our issue for October 4th, in which we commented upon his inaugural address to students. This article, said Professor Pite, contained a query by the Editor as to the meaning of the following sentence: "The study of materials is primary to the architect, then the study of construction and purpose, followed by such æsthetic considerations as have not been evolved in their progress through an artistic mind." The Editor asked: "How did that 'not' get in there? Where are the æsthetic considerations to come from if they have not been evolved by an artistic mind? We almost thought that 'not' was a printer's error, but the remainder of the sentence seems to imply that it was intentional:—'The impressiveness which is architectural, in the Temple of the Sphinx, has its main sources in these three primary streams; they here combine in a building that owes nothing to what is commonly regarded as architectural detail or to æsthetic considerations. Dignity, fitness, and security are expressed alike by the material, construction, and arrangement.'"

The question, continued Professor Pite, that he had asked them (the A.A. students) to consider was: What are the æsthetic considerations that had not been evolved in the artistic mind? The Editor seemed to think there were no others that would suggest themselves to artistic minds.

Before giving his explanation, Professor Pite read out three short essays prepared by students in answer to the question which we raised. The first suggested that the other considerations were proportion, colour, scale, and economy, but admitted that all these might be understood by the phrase "serving its purpose." Commenting upon this, Professor Pite suggested that proportion and scale did not ordinarily pass through the artistic mind, but required the application of study. Colour, however, was one consideration.

The second essay drew a distinction between "mechanical purpose" and "æsthetical purpose," and concluded that if a monument had no æsthetical value it did not serve its purpose. This, said Professor Pite, was a disputable statement, in view of Cleopatra's Obelisk; and what about Lot's wife?

The third essay suggested that at least two other considerations would be present in the mind of the architect, namely: (1) Local conditions, such as area of site, climate, available plant, and materials; and (2) the preconceived ideal of beauty, which showed itself in the choice of mouldings, grouping of masses, and colour effect. The paper emphasised the influence of tradition, and concluded with a comparison between a Chinese wooden gate and an English lychgate, both of timber, but with great differences of treatment, which were, in the main, due to tradition. Professor Pite said that the writer, in his "preconceived ideal," had got hold of a fairly clear line of thought; but he (Professor Pite) would give his own answer to the question, "What are the æsthetic considerations besides those which ordinarily pass through an artistic mind?" He assumed that the artistic mind was one trained or gifted to consider and express the purpose and construction of a building without incongruity or abnormality in its proportions and aspect. Besides this there would be first: ornament. The nature and meaning and use of ornament are among the things which do not necessarily arise from the primary considerations of material construction and plan. Then the employment of colour decorating; afterwards the didactic purpose, that is the teaching to be conveyed by the building and expressed in its decoration, and the reflection of traditions or ideas would also come to be included in the group of subjects demanding the study and consideration of architects. In Greek temples, in St. Mark's at Venice, and in Gothic cathedrals, though each type will include the primary elements, these other considerations will be found expressed. He would give the solution of the question in a phrase:— Besides the contract there are the extras. The extra to construction is architecture. It is that which an architect puts into his work more than mere constructive or purposeful arrangement. After all the practical considerations have been satisfied the architect has to satisfy himself—a more or less large bit of himself has to be supplied to complete the design. Really what he knows, what and how he thinks, and what he is, is to be expressed; this aspect is the practical one for students in these individualistic days. After the contract for fulfilling definite requirements in certain materials has been undertaken and balanced, throw something else in, add some profit, an extra, the act which may express your own pleasure in your work.

AN INCA CITY UNCOVERED.

The discovery of a remarkable ruined city dating back to the days of the Inca civilisation is reported to the Royal Geographical Society from Peru. A scientific expedition, organised with the assistance and support of Yale University, has been at work there since the end of June under Professor Hiram Bingham in company with Professor J. Bowman and Professor H. W. Foote. Professor Bingham has travelled before in Peru, and it was largely for the purpose of extending the investigations which he then began among the Inca remains that the present expedition was organised. Writing from Santa Ana at the beginning of August, he announces that three days' journey from Ollantaytambo (a place north-west of Cuzco), on an almost inaccessible ridge flanked by magnificent precipices, he came upon the ruins of a wonderful Inca city.

Although at the time of writing only the most cursory survey of the ruins had been possible, Professor Bingham states that one building contains the largest and most beautiful windows that he has ever seen in Peru. Another building has several large and finely worked stones in its walls, including one measuring approximately ten feet in length, eight feet in height, and more than two and a half feet in thickness. Some of the blocks are of still greater length, and all of them are worked, as the old chroniclers would say, very "craftily," with exact angles. Indeed, the stonework is as fine as any in Cuzco or Ollantaytambo, while the ruins as a whole, Professor Bingham declares, are vastly superior to those at Choqquequirau and other remote sites which he has visited. So far as he has been able to ascertain, only three Peruvians and a few Indians have seen this ruined city in modern times. Those who know of it at all speak of it as Machu Pichu, or old Pichu, and Professor Bingham believes that the ruins may be identified as the remains of the ancient city of
Pitcos, or Pitchu, of which mentio
made by some of the old Spanish wri
The ruins are very extensive, and at
time of writing Professor Bingham h
soon to revisit them and spend thre
four weeks in making a plan of them
clearing away the forest jungle which
overgrown a large part of the city.

In an editorial note in the present i
reference is made to a paper on the I
read by Mr. C. Reginald Enock, F.R.
before the Architectural Association,
reported in this journal on Novembe
1909. Mr. Enock states that it is in
rainy regions of the mountains, w
adobe bricks would have quickly peri
that the beautiful examples of the s
shaping art of these people are found.
whole region over which these monun
are found, he says, may be taken as
than 1,500 miles long by 300 miles
extending throughout what is now I
dor, Peru, Bolivia, and part of Chile
enormous range of territory for a semi
lized people to influence, and greater
that which included the civilization c
Euphrates and the Nile together.

The Inca Empire flourished, as f
can be ascertained, from the tim
Manco Capac, who founded the dy
at the beginning of the eleventh centu
our era, to the time of the arriv
Pizarro and the overthrow of Atahual
1532. The Incas were preceded by
perhaps inherited their civilization
the Aymaras.

The famous Inca roads, to which
sion is made in our editorial note,
been described, generally by those
have not seen them, as equal to the
of the Romans, which is far from
true. They were, however, in the a
gate, more than 1,100 miles long, and
of some merit as specimens of eng
ing, crossing by rock-hewn steps the
mits of the Andes above the perp
snow-line, passing swampy lands by
causeways, and rivers by means of t
markable suspension bridges ma
woven grass or osiers, and by stone
tures.

Cuzco, the ancient metropolis (the
signifies the navel), is about 200
from Lake Titicaca, and overlookin
one of the most remarkable buildi
the world, the fortress of Sacsaihu
It consists of a series of four or more
walls, from 12ft. to 25ft. high, fo
terraces up the hillside 1,800ft. long.
walls are built as great revetments
twenty salients at regular interval
masonry being formed of Eycl
worked stones, which in some cas
20ft. high, weighing many tons.
masonry is of remarkable character
stone being a polygon, not a cube;
theless, the contact between the sto
generally so perfect that a knife-blad
not be inserted; and there is no mor

In the fortress of Pisac is enclos
temple in which stands the famous
nomical stone or pillar by which th
astronomer-priests determined the
stices. It is thought that whil
temples and fortresses of Cuzco dat
from the beginning of the eleventh
tury, others are of unknown age, and
probably built by the Aymaras, th
decessors of the Incas. The Inca an
Inca architecture differ much, but
liths of considerable size were comm
both; and the chief characteristic of
architecture is its solidity. Hence th
servation of so many remains, and, i
ticular, the survival of the ancien
which has just been uncovered.

E ST. PAUL'S AND SOUTHWARK BRIDGE SCHEMES.

The Bridge House Estates Committee London City Corporation have ap- nted a sub-committee to consider all tters concerning the Bridges Act, which bodies the power to construct St. Paul's idge and reconstruct Southwark Bridge. is sub-committee, says the "City Press," ve many important details to thrash out. rst, of course, a number of preliminary identals concerning the acquisition of operty must be dealt with, and many of se questions have to be settled within a onth. The most interesting matter to considered has reference to the order which the work is to be undertaken. ere is a more or less shadowy under- nding on the part of the Common Coun- that Southwark Bridge shall be re- ilt before the new bridge is commenced. this course, however, certain object- ns have arisen since the discussion in e Court. If Southwark Bridge is dealt th first, the work could commence with- a very short period; but this would in- lve an interruption of traffic facilities ich would cause some inconvenience for lengthy period. There would be no idge over the Thames between London d Blackfriars; and, although Southwark s been in the past almost a negligible antity, so far as vehicular traffic is con- rned, it has always carried a heavy foot affic, while the bridge has played a eater part as a link between north and uth since the introduction of the motor.

Southwark is closed, the vehicular affic would be diverted, but it would be ecessary to construct a bridge for foot assengers. This would cost at least 30,000. On the other hand, if a start made with the new bridge, no interfer- nce with the existing facilities would take lace, and the £30,000 would not be spent. gainst this must be placed the fact that, hile, as stated above, an immediate start ould be made with Southwark Bridge, e position is not quite the same in the ase of St. Paul's. The County Council ave to be considered, and, although there a virtual agreement between them, Par- ament has to sanction the arrangement. his it has tacitly undertaken to do. Still, e fact remains that another year must lapse before the Council obtains the ower to construct the tramway subway. It ay be that the sub-committee will con- ider the position so far guaranteed as to induce them to recommend that St. Paul's Bridge should be commenced first; for the questions surrounding the acquisition of land must take some time to settle. The heads of the preliminary arrangement, which is not yet complete, have been given by the London County Council as follows:—

(1) That a double line of conduit tramways shall be constructed, commencing by junctions with the Council's existing tramways in Southwark Street, and extending over the proposed bridge and terminating at Cheapside.

(2) That the said tramways between Cheapside and the south side of Cannon Street shall be constructed in a subway.

(3) That the construction of the said tramways and works shall be carried out by the Corporation according to plans reasonably approved by the Council.

(4) That the Council shall own the subway and the tramway therein, and the junction lines on the southern approach to the bridge, and shall reimburse to the Corporation its outlay in the construction thereof.

(5) That the Council shall lease from the Corporation for a term of sixty years the other portion of the said tramways, and, if the lease is not renewed at the end of that period, the Corporation shall purchase the subway and the tramway therein on terms to be agreed, or, failing agreement, to be settled by arbitration.

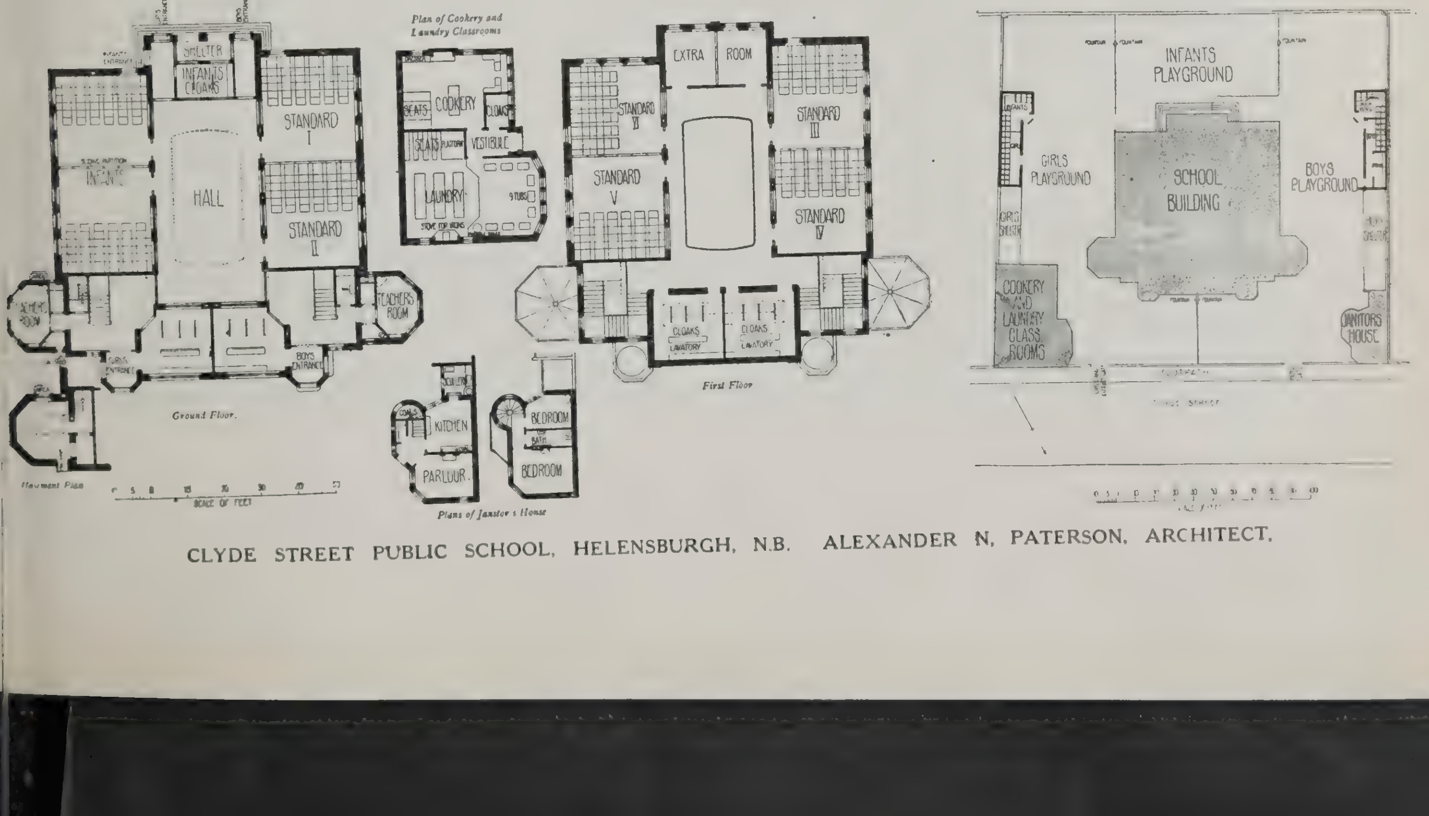
(6) That the rent to be paid for the tramways to be leased to the Council shall be such a sum annually as will meet the debt charges of the Corporation in respect of the construction of such tramways. Such rent not to be paid out of the general county fund.

(7) That, in view of the fact that the Act obtained by the Corporation to authorise the construction of the bridge does not contain powers for the construction of tramways and the subway referred to, the Council shall promote legislation to enable the above heads to be given effect to; and subject to the powers in question being obtained, the Council shall contribute £350,000, or one-half of the net cost (whichever is the less) of the widening of St. Paul's Churchyard as proposed in the Act obtained by the Corporation in 1911.

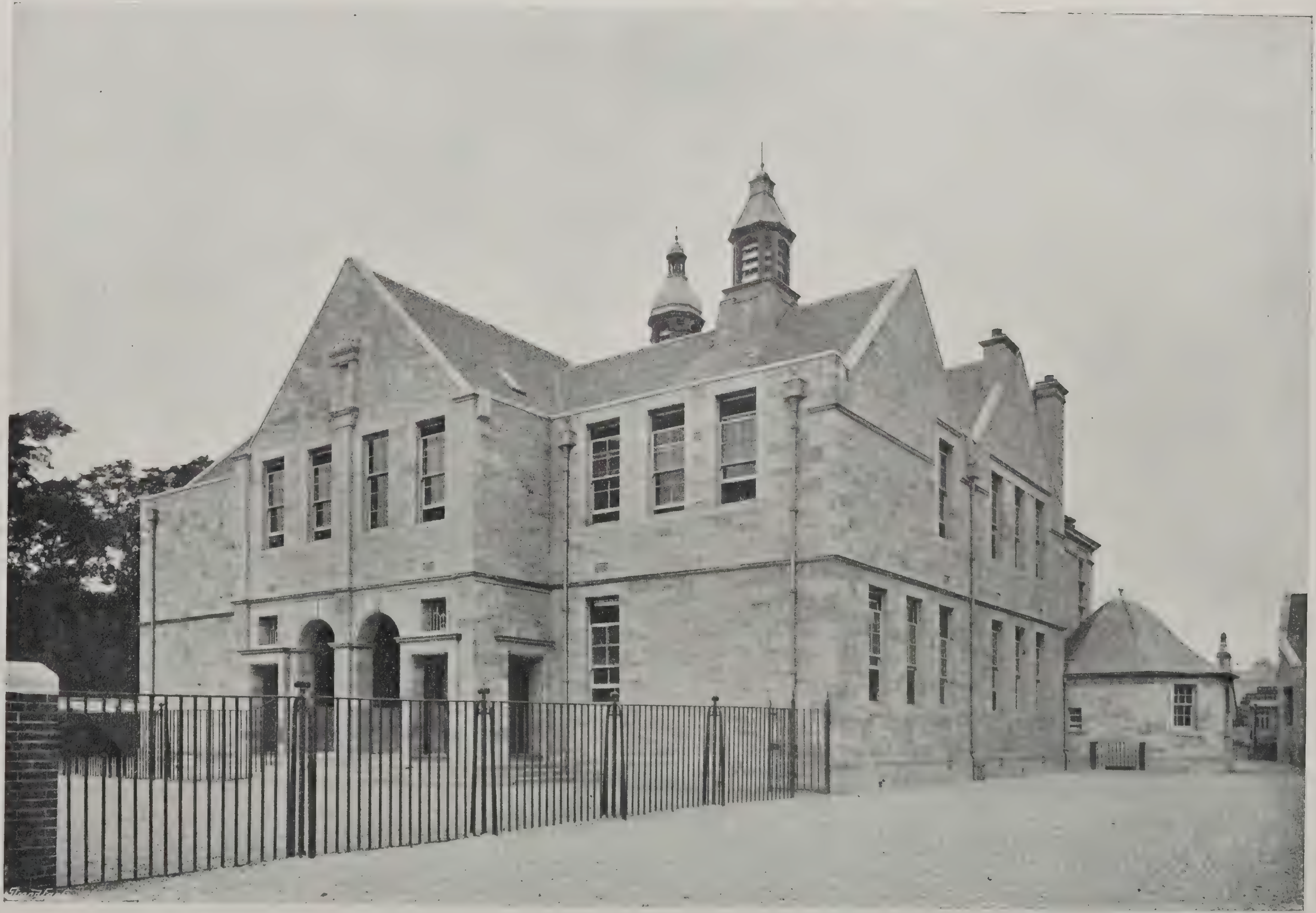
It is explained that Clause (5) is simply a provision to prevent the unlikely contingency of the Corporation failing at some future time to renew the lease of the bridge tramway.

The report points out that the Home Secretary suggests the need for a road on the southern approach. That road, the Committee estimate, would cost between £200,000 and £300,000. They do not consider it necessary to construct such a way until the opening of the bridge itself demonstrates its necessity.

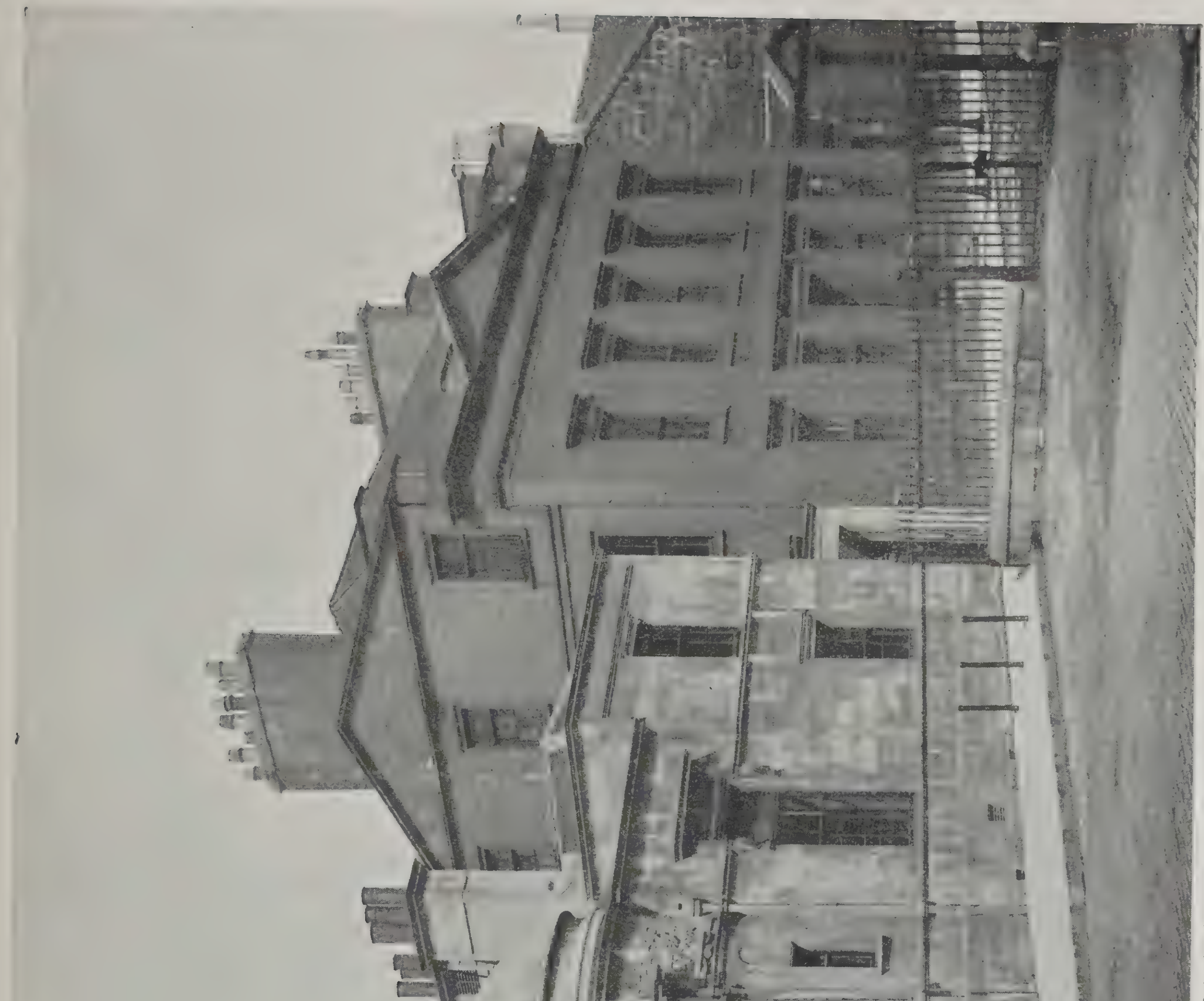
When the matter came up for discussion by the London County Council last week, Mr. Stettauer moved an amendment, calling on the Council to refer the report back, in order that a scheme might be projected for linking up the northern system by a subway beneath Aldersgate Street. The amendment was lost. The object of another motion, by Mr. J. D. Gilbert, was the preparation of a scheme for the construction of a new street in continuation of the proposed southern approach to the bridge. Mr. Gilbert argued that much money would be saved to London, ultimately, by the taking of such a step, and Mr. A. Wilson, seconding, pleaded for the acceptance of the suggestion in the interests of the local authority concerned. The Chairman of the Improvements Committee, Lord Alexander Thynne, M.P., said, however, that the question of a southern approach had been constantly before the committees concerned. He was confident they would be able to show a conclusive case before a Committee of Parliament as to the adequacy of the projected southern approach to the bridge. Sir John Williams Benn described the proposed approach as practically a "dead end," but Mr. Hayes Fisher, M.P., thought it would be unbusinesslike to proceed in too great haste in such a matter. The Home Office had suggested that a new road should be made at once, but even the bridge could not be completed for six or seven years. Delay was often the cheaper policy, and if they waited for a few years they might be able to make the improvement on more reasonable terms than at the moment. It was never wise to purchase land before the necessity arose—in fact, it was one of the mistakes of the old Progressive Party to acquire land before they wanted it, and London had in consequence been mulcted in large sums for interest. A report ought to be brought up giving the cost of an effective "linking-up" scheme, and showing the proportion of the cost which would fall on the tramways. At half-past seven the matter was "talked out" under the Standing Orders, the Council proceeding to deal with unopposed business.



CLYDE STREET PUBLIC SCHOOL, HELENSBURGH, N.B. ALEXANDER N. PATERSON, ARCHITECT.



CLYDE STREET PUBLIC SCHOOL, HELENSBURGH, N.B.: REAR ELEVATION. ALEXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A., ARCHITECT.



EYE INFIRMARY DISPENSARY, CHARLOTTE STREET, GLASGOW. ALEXANDER N. PATERSON, M.A., A.R.S.A., F.R.I.B.A., ARCHITECT.

CORRESPONDENCE.

The Editors disclaim all responsibility for the statements made or opinions expressed by correspondents.

Correspondents are asked to be brief, and to write on one side of the paper only.

Lectures on Gothic Architecture.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Your very kind notice of my lectures at University College did me a small amount of injustice on one point. It accused me of presenting to my audience only the boldest mechanical theory of the Gothic style. It is true that I laid stress on the close fit to the building conditions. But my hearers were not asked to regard Gothic cathedrals as mere anatomies of construction. The expediency of English building, I said, lay "not only in the requirements of material, but just as much in racial character, in the incidence of continental influence, and moreover in the personal ambitions, the loves, the hates, the beliefs, and the ideals of the builders." Also I pointed out how in the mediæval organisation of the building capacity "the strong man, whether cleric or mechanic, left his mark on the building." Was not this just that "meaning to do a fine thing" which you observe in Peterborough front?

EDWARD J. PRIOR.

It is impossible to remember afterwards every word of a long lecture; but if Mr. Prior's lecture included the words he quotes (as we have no doubt it did) they certainly did not make a very prominent impression in comparison with the bulk of the lecture. The impression left on our mind by the lecture as a whole was that which we gave—that Gothic architecture was to be regarded mainly as a struggle with structural difficulties; and we should think that was the general impression left on the minds of the audience. The particular forms of Gothic architecture no doubt arose out of structural problems; but it was something much more than that; it represented a great architectural ambition, and our complaint was that the structural basis was so much accentuated in the lecture as to leave the impression that there was little or nothing beyond that.—ED.

Northampton Polytechnic Institute, Clerkenwell.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—The dissolution of the City Polytechnic in 1907 rendered a new scheme for the management of the Northampton Polytechnic Institute necessary, and this scheme has now been sealed by the Charity Commission. The principal matter of public interest arising out of it is that it gives the Governors power to appoint a President of the Polytechnic, and I have the pleasure to announce that in accordance with these powers, H.R.H. the Duke of Connaught, K.G., has been offered and has graciously accepted the new office.

R. MULLINEUX WALMSLEY,
Principal.

Assistant, Office of Works.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—With reference to an enquiry that appears in your issue of October 25th, the following information may be of service. The age limits are 23 to 30 years on the first day of the examination. They (candidates) must have served five years in the office of an architect, builder or surveyor, and must give satisfactory evidence of their technical training. Examination subjects are composition, details of construction in architectural works (including theory), quantities, use of materials. Salary commences at £150, and a fee of £3 has to be paid when sitting for the examination. The assistant architects' examination includes drawing and design of architectural works, details of construction, etc., specifications, quantities and estimates, properties and use of materials, surveying and levelling, sanitary engineering, principles and practice of valuations, easements, etc. (freehold and leasehold property). Easements includes light and air, arbitrations, fixtures and dilapidations. Examination written and oral. Candidates to be nominated by First Commissioner of H.M. Works.

H. SLICER, M.S.A.

"THE PRINCIPLES OF PLANNING."

Mr. Marks, in the course of a long letter in reference to our review of the above book, states that we were incorrect in saying that he had not mentioned the proper aspect for the kitchen window in a dwelling house. We certainly did not notice it, but of course we are bound to correct and apologise for any mis-statement as to a matter of fact. The remainder of Mr. Marks's letter merely amounts to saying that we are wrong in our opinions, and that he knows better than we do; a question which we must decline to discuss with him.

PICTURE EXHIBITIONS.

Messrs. Knoedler's Gallery.

In their new and charmingly designed gallery at 15, Old Bond Street, Messrs. Knoedler and Co. have got together a small but very good loan exhibition of English Masters, the proceeds of which, like those of the Grafton Gallery Exhibition, are to go to the National Loan Exhibition Fund. The exhibition consists of seventeen large works, including some excellent examples of Raeburn; two large and important works by Turner; portraits by Gainsborough, Romney, Hoppner, and Opie; and two fine portraits by the nearly forgotten R.A., Francis Cotes (1726-1770). It is very seldom indeed that Cotes's works are seen in a public exhibition, and the fine and characteristic portrait of a young man, Sir Griffith Boynton, which is said not to have been exhibited since the eighteenth century, shows that he was a painter whose works ought to to be better known than they are.

The Medici Society.

This Society exhibit, in their gallery at 7, Grafton Street, a large collection of their excellent coloured reproductions of celebrated pictures, which as reproductions can hardly be surpassed. What is of more interest perhaps than these is the exhibition upstairs of examples of modern printing, from the foundation of the Kelmscott press until to-day. This includes some of the most beautiful printed pages we have ever seen, most of them revivals of old founts of type. Some of the examples, however, show that in some cases the desire to make an artistic effect h been more prominent than the desire make the page easily legible. That prin ing should be easy and convenient to th eye to read is the first virtue it ought have; without that, artistic effect is only misplaced ambition. The Vale Pre Shakespeare, for instance, opening at th commencement of "Othello," is simply e asperating to the reader, with its borde and its insertion of an ornamental leaf the beginning of each line or speech. Th old practice, revived in Morris's "Goth Architecture" and in some other e amples, of inserting some little ornament design, within the line of the text, aft each full stop, is irritating to the eye; a the fount of the "Gothic Architecture though very artistic in general effect, as devoid of clearness to the eye as its pr posterous argument is to the min Among the exhibits of the Chiswick Pre the "Gunnlaug Saga," printed for Morris "in a type copied from one of Ca ton's founts," is open to the same obje tion—it is most ungrateful to the eye; b the copy of the "Diary of Lady W loughby," by the same firm, is an ide type. Among others that are very go are the Daniel Press black-letter printi of "The Yattendon Hymn-book," and t cursive type of a poem by Mr. Rob Bridges, and the "Sartor Resartus" a the "English Bible" by the Doves Pre The collection is well worth a visit.

THE EDUCATION OF BUILDIN STUDENTS.

Glasgow Technical College Architectur Craftsmen's Society.

At a meeting of this society held in Societies' Room in the Technical Colle Mr. James S. Boyd, President, in chair, Professor Charles Gourlay, B.S A.R.I.B.A., delivered a lecture entit "The College Diploma and Certific Courses in Building." In his introd tory remarks the lecturer pointed out t it lies more with the student him whether or not he succeeds in obtainin thorough knowledge of his subject, th with his teachers or the general cou which has been planned out for him. student requires to exercise such quali as earnestness and thoroughness, also faculty of taking pains to understand learn what he is taught. From the pr tical point of view the most import quality to be cultivated by a student building is the habit of accurate obser tion. Assuming a student to possess th qualities, then the greatest profit, in far as attendance at classes is concern will accrue to him if he takes those cla in the order which experience has pro to be most beneficial. The fundame idea underlying all courses of instruc is the desire on the part of the educatio authorities that the student should rec a good foundation and a thorough eq ment for his work in life. They wish to leave college strong in his subject able to pursue his labours with as g certainty of being all right in them a possible. The lecturer then detailed day and evening courses in Building the College. In conclusion. Prof. Gou said that the education of the build student was a serious matter, and muc that genuine happiness to be found one's work in life depended on the s in which he pursued his studies, wh when completed, should greatly add to skill and to the pleasure in exercisin which practical work affords him.

A LIBRARY DOORWAY.

The accompanying illustration shows a oorway to the library at No. 11, Hill treet, Berkeley Square, London, W., xecuted from the design of Mr. J. eonard Williams, F.R.I.B.A. In this own house the architect had opportunity or an elaborate decorative scheme, the esult being a display of colour and richess quite unusual. In the loggia, for xample, illustrated in our issue for Sepember 27th, is a wealth of Florentine ceilng decoration in conjunction with marble olumns and flooring, and the same sumpuousness is seen in the rooms throughout he house. The library is panelled with umigated English oak, and its chimneyiece and doorway are embellished with arved drops, swags, etc., in the style of rinling Gibbons, this work having been ery finely executed by Messrs. H. H. Martyn and Co., of Cheltenham, who were lso responsible for a large amount of imilar work in the dining-room, boudoir, nd other rooms.

"CHURCH STUDY."

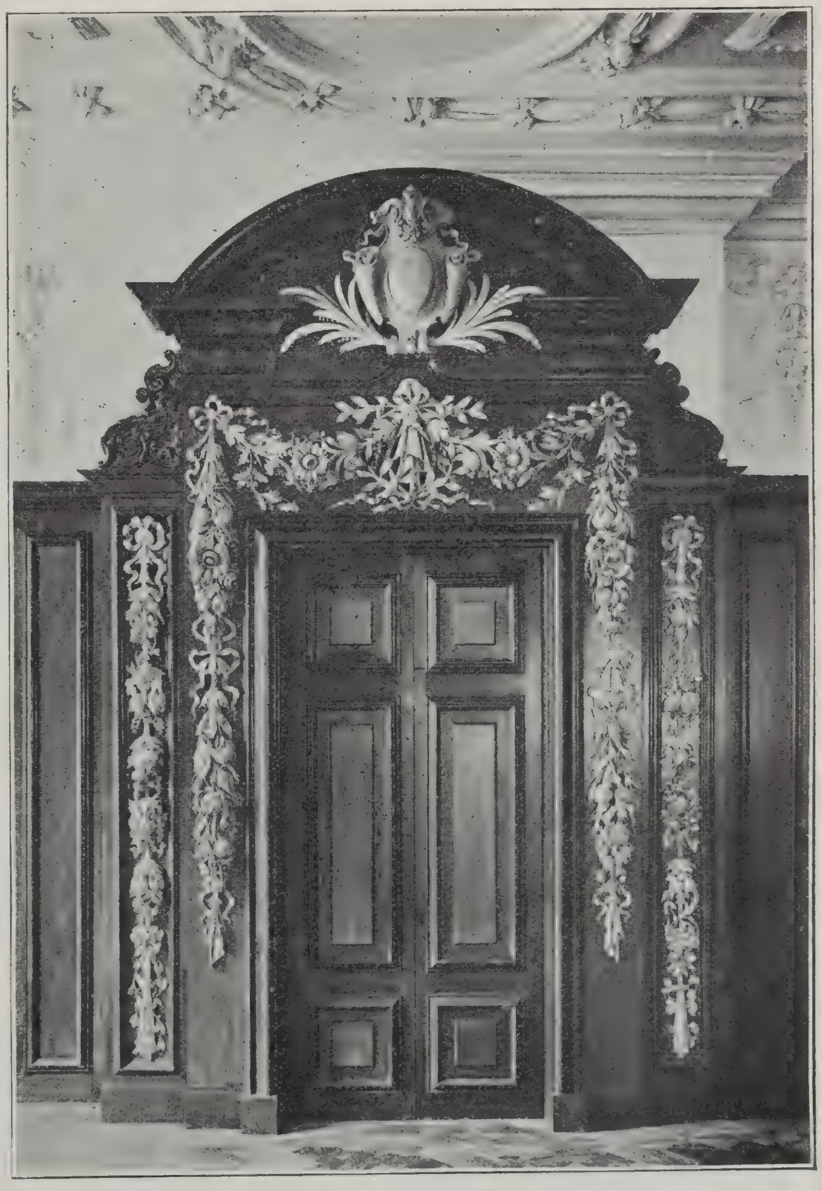
The need for more intelligent appreciaion of environment, increasing the inerest in life and in living, has been long erceived, and the means of ensuing it re already many and various. Hence the widespread cult of "nature study," a henomenon that seems to have suggested Miss M. M. Penstone's book on "Church Study," since that lady is, it appears, the uthor also of a book called "A Cycle of Nature Study," and of another on "Town Study," and in the preface to "Church Study" it is claimed that the principle of awakening the young to an intelligent objective study of the church buildings, its furniture, its ornaments, its officers, its services, its ritual. It is doubtless true that, as the author observes, there is a period when the child is specially interested in the outward things of environment, the mind not being sufficiently developed to concern itself very much for abstract spiritual truth; and it is thought that this opportunity of engaging the intellectual side may be met by affording the means of studying the church as a building—"as a kind of religious museum, full of quaint and interesting objects, which have a meaning not at first apparent."

The idea is excellent; and from a cursory examination of Miss Penstone's book we are disposed to believe that it has been most skilfully developed. The inductive method of teaching has been wisely adopted, and the child's attention having been fixed on the existing church, the mind is led back step by step to earlier buildings which may have occupied the site, until we get back perhaps to Saxon times, when, as at Greenstead Church, in Essex, of which a portion is sketched, the building consisted largely of logs set up side by side—or even to the "rough structure of wattles daubed over with mud." In a note to the teacher, Professor Baldwin Brown ("The Arts in Early England") is usefully cited: "It may be stated pretty confidently that the great majority of our old parochial churches, whatever the date of the existing fabrics, stand on the site of structures dedicated to religion before the Early English church—there was one built by Norman or by Saxon workmen, the associations of which carry us back to the earliest periods of our national history."

A chapter on sites explains why the parish church stands where it does—near the market-place, by the riverside, at the cross-roads, in the park of some great house whose history dates from the feudal overlordship of the owner, or in the position of Goldsmith's "decent church that tops the neighbouring hill," where the strong square tower was in the nature of a fortress; and it is recalled that at Clymping, in Sussex, recesses in which the ends of a drawbridge are supposed to have fitted are still to be seen, one on each side of the doorway in the church tower. It is also explained that the turrets sometimes seen at the corners of towers, built at first to enable the watchers to see all round the country, and thus discern the foe while he was yet afar off, were repeated in later structures, when perhaps their original purpose had been forgotten, simply because, like the battlements, they "gave variety and picturesqueness to the solid mass of the tower," or, it may be added, perhaps because of the difficulty of breaking away from traditional forms.

Both inside and out the salient features of the church are examined and explained, with, so far as we have observed, careful regard for accuracy of statement, the author knowing well both where to get her information and how to make use of it. The scope and purpose of the book having been stated, it will be understood that the architect may not turn to it for information about building. Nevertheless, he will find in it a handy compendium of cognate matters with which he may be quite excusably less well acquainted; and here and there he may discover a recondite reason for familiar details, which thereafter he will cease to regard with the indifference of ignorance. Compiled with care and written in a plain and clear style, in which all the points are made with the dexterity of the trained teacher, this book—which, moreover, is well illustrated—seems admirably calculated to fulfil the very useful purpose for which it has been designed—that of awakening and stimulating an intelligent interest in church architecture. Architects, whether or not they happen to be builders of churches, will wish a full measure of success to what seems to make towards the fulfilment of a desire that they frequently and fervently express—that the public may be aroused to a more enlightened appreciation of the good work that is being done, and thence may proceed to a demand for still higher achievement, and onward to the advancement of the art.

Church Study. Suggestions for a Course of Lessons on the Church Building, its Furniture, its Offices, etc., etc. By M. M. Penstone, late Headmistress of the Home and Colonial Society's Secondary School for Girls, Highbury. National Society's Depository, 19, Great Peter Street, Westminster. Pages xiv.—326, 7½ins. by 5¼ins., 4s. net.



LIBRARY DOORWAY, NO. 11, HILL STREET, BERKELEY SQUARE, LONDON.
J. LEONARD WILLIAMS, F.R.I.B.A., ARCHITECT.

INSTITUTION OF MUNICIPAL ENGINEERS.

Third Annual Report of the Council, 1910-1911, and Annual Meeting.

In this report, from which a few extracts are here made, it is stated that at June 30th, 1910, the roll of the institution was 820, consisting of 708 members, 17 associate members, and 95 students. At June 30th, 1911, the roll was 860, consisting of 697 members, 65 associate members, and 98 students. During the year 36 members, 35 associate members, and 22 students were elected, and 4 associate members were transferred to membership, and 17 students transferred to associate membership. The losses resulting from death, resignation, and erasure by reason of change of appointment and other causes, amount to 51 members and 2 students. The increase in the associate-member class and the number of new students which have been added is a source of considerable strength to the institution, and augurs well for the future.

The excess of income over expenditure on the year's working amounts to £127 10s. 6d., making an accumulated balance of £186 19s. 4d.

Three general meetings, eleven council meetings, and twenty-eight district meetings were held during the financial year. There were also thirty-four meetings of the Finance Committee, and four of the Examination Board. The general meetings were held at Eastbourne, Manchester, and Penzance, the district meetings at Bushey, Manchester (5), Sheffield, Paignton, Grimsby, London (6), Bolton, Wolsingham, Sunderland, Leeds, Newcastle (2), Cambridge (2), Darlington, Horwich, Wrotham, Rochester, and Norwich. All the other meetings were held in London. Arrangements have been made for forming a district committee for Scotland. Alterations in the boundaries of one or two districts have been suggested to the council as likely to be more convenient to the members, while a proposal has also been made to work the districts on a county basis. These questions are now being considered by the Council.

The Examination Board has now been fully constituted, and the Local Government Board of Ireland, which is the only board that concerns itself officially with the qualifications of municipal engineers and surveyors, have informed the council that the diploma of the institution will be duly regarded in considering the fitness of candidates for appointments as town surveyors in Ireland. Except for the general paper only candidates over twenty-five years of age will be admitted to the examination, the council being of opinion that it is improbable that the requisite degree of practical experience can be acquired at an earlier age.

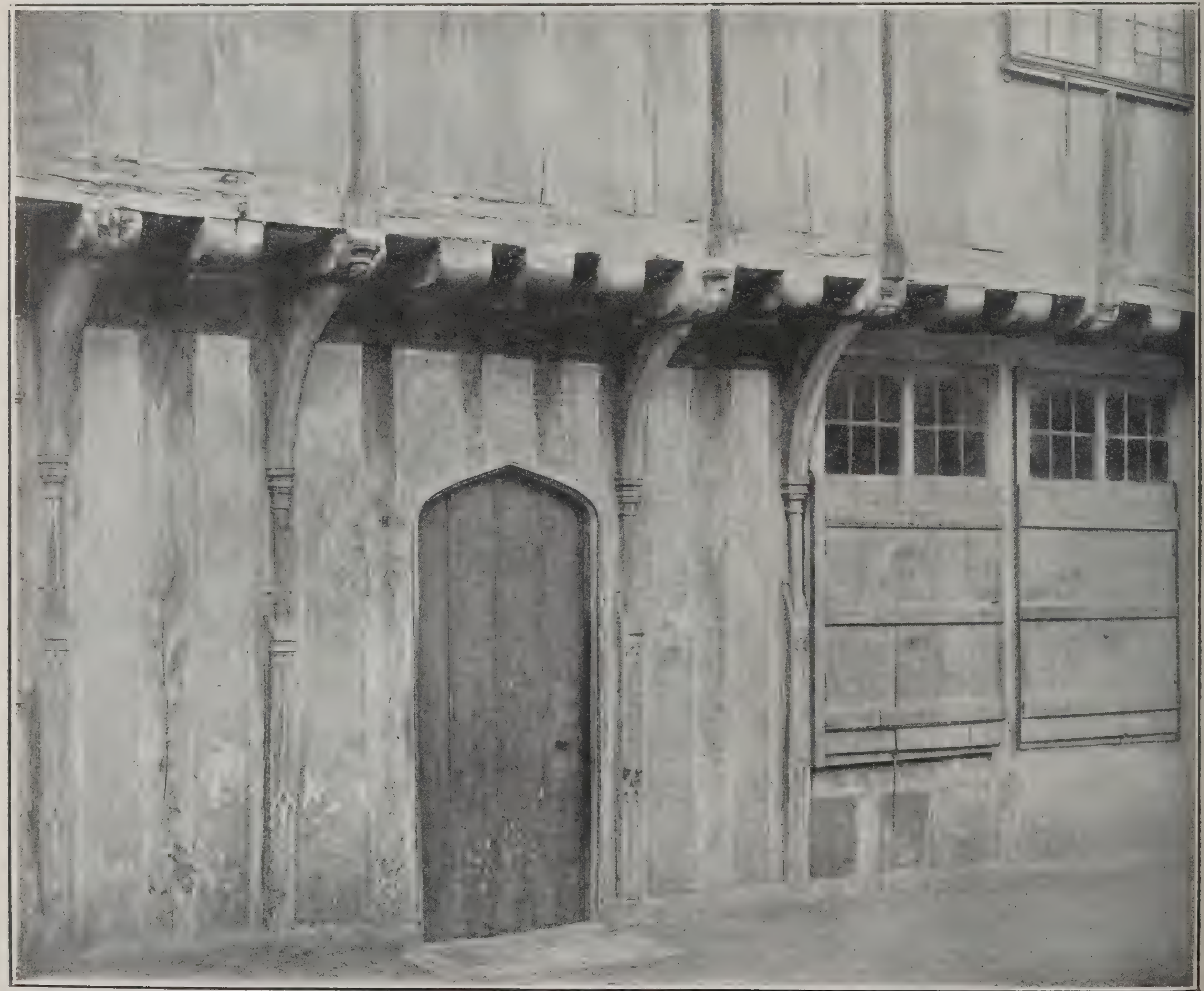
The Council note with satisfaction that representations have recently been made to both the Chancellor of the Exchequer and the President of the Local Government Board as to the possibility of including superannuation provisions for local government officers in the measure which has been promised to be introduced with regard to teachers. Definite hopes are held that superannuation of all local government officers will shortly receive recognition from His Majesty's Government.

The Council are watching the progress of the suggested R.I.B.A. Registration Bill, and will take what action they deem necessary in the interests of the members.

The Council and Science Standing Committee of the Concrete Institute, being desirous of forming a joint committee with members of the municipal engineering profession to consider the loads which shall be provided for in the design of highway bridges, requested the institution to send delegates, and Messrs. A. E. Prescott, H. C. Adams, and H. C. H. Shenton were appointed.

Premiums for Papers.

The Council have decided to award annually a premium for a paper read before a meeting of the institution; and they are pleased to record that the President, Mr. A. E. Prescott, has also offered a premium for the best paper read during his year of office. The premiums for the year 1910-11 were awarded as follows: President's premium: Mr. Frank Latham,


DETAIL OF HALF-TIMBER WORK, THE GUILDHALL, HADLEIGH, SUFFOLK.

r his paper, "The Phenomena of the :a, as regards Encroachment and the :clamation of the Coast." Institution emium: Mr. Arthur Bowes, for his per, "Sewage Treatment — within ason."

In correction of persistent rumours, the uncil desire to take this opportunity of forming the members that they have t had under consideration the question amalgamating with any other body, ither have they been approached to it end.

The third annual meeting of the Insti ion of Municipal Engineers took place Saturday, October 21st, in the Guild- ll, Windsor (the work of Sir Christopher ren), the members receiving a hearty lcome from the mayor and corporation. e chair was taken in the first instance the chief magistrate of Windsor, sup- rted on the dais by the President of Institution, Mr. A. Ernest Prescott. ough engineer of Eastbourne.

Mr. E. A. Strickland, borough surveyor Windsor, who had been elected presi- it for the ensuing year, delivered his sidential address, in which the variety topics dealt with included a reference town planning. He was confident that nicipal surveyors would view with great tification the carrying into effect of se sections of the Town Planning Act ich would enable the home life of the orer class to be improved.

A vote of thanks to the retiring presi- it, Mr. A. Ernest Prescott, was pro- ed by Mr. Horace Boot and seconded Mr. Henry C. Adams.

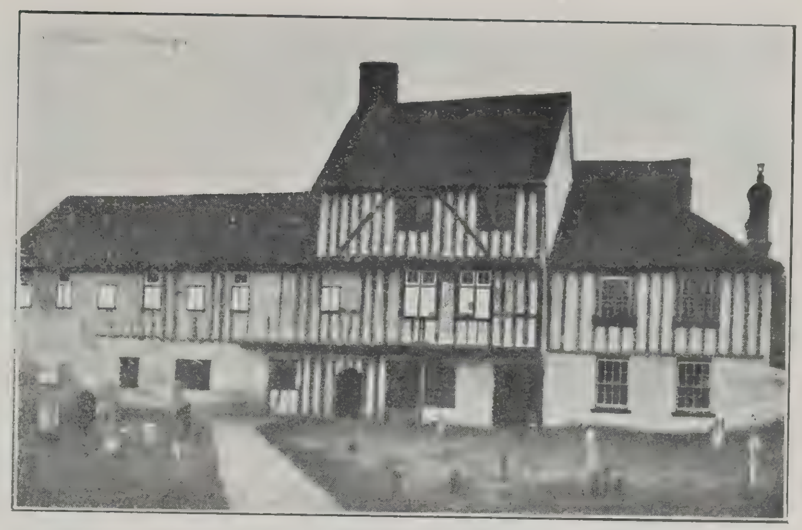
LEGAL.

The Position of Surveyors.

n the City of London Court last week, John Paget, K.C., heard a case in ch Messrs. Jones, Lang, and Co., auc- ieers, Cheapside, sued Mr. Frank Bind- solicitor, Mitre Court, Temple, to re- er 2 guineas for inspecting property in Lane and making a valuation upon instructions. Mr. R. F. Taylor, a nber of the plaintiff firm, said that he not know any one else in the matter ex- t the defendant, who gave him details he property and asked him to make the iation. Solicitors were coming to them ry day acting for executors, and that been the practice for many years. ey could never carry on their business urveyors if solicitors were not person- liable. He did not know that the de- lant was acting for Mr. Thomas ggs, an executor of an estate. He did know even now who the principal was. defendant said that he did not pledge own authority when he went to the ntiffs. He gave them instructions on alf of Mr. Thomas Briggs, and the ntiffs had specified notice as to the icipal. Sir J. Paget said he must find the defendant. The plaintiffs had d as agents for a principal disclosed er by name or by description. The de- lants said that he would not ask for s in the circumstances.

HE GUILDHALL, HADLEIGH.

adleigh possesses many delightful old ies, prominent among them being the dhall, now used for school purposes. building, facing the church, is a fine imen of half-timber work dating from fifteenth century. The details of the truction are well shown by the photo- h reproduced on the preceding page.



THE GUILDHALL, HADLEIGH, SUFFOLK.

ENQUIRIES ANSWERED.

Calculations for Floor Beams.

D. writes: "Kindly show a simple and ready method of calculating the size of joists (binders) and the thickness of concrete in a floor, for which the binding joists are continuous; the distributed load being 4 cwts. per ft. super."

—The simplest practical method of calculation for floor beams is to make use of one of the handbooks of standard steel sections, such as that issued by Messrs. Dorman, Long and Co., Middlesbrough. In this the properties of all standard sections rolled are set forth, together with the formulæ by which they have been arrived at, all in a handy form for reference. Whatever method is followed, recourse must eventually be had to such a list of sections, as it is useless to decide on a section which is not rolled. In a case where uniform distributed load is met with, three considerations are requisite. (1) Maximum bending moment. This will occur at the middle of the span and will be equal to $\frac{Wl}{8}$, where W equals the total load on beam in tons (in this case equal to $\frac{\text{span} \times 9 \times 4}{20}$), l equals length of span in feet. (2) Maximum shear. This will occur over each support, and will be equal to half the supporting force there exerted $= \frac{W}{2}$. (3) Deflection. This is guarded against by selecting a section of a depth at least $\frac{1}{20}$ of the span. The thickness of concrete is neglected in calculating the strength of the floor, the lacing-joists being worked out in a similar way to girders according to their spacing and span (not more than 3 ft. apart, unless the concrete is reinforced with rods, hoop iron, or expanded metal), a sufficient thickness of concrete being provided to encase them. The efficiency of the floor in question would be greatly increased if the girders and lacing joists were completely encased on their under sides. G.

Renovating a Bath.

L. M. (Purley) writes: "The bath in my house having become shabby, I have tried to improve its appearance by the application of bath enamel. The result is by no means satisfactory; the surface is uneven and the enamel has not completely dried here and there. Also it has almost washed off underneath the hot water tap. Please give me your advice."

—Querist does not say how the enamel was applied. If it was put on direct over the old surface the result is certain to be bad. All enamels are semi-transparent, so that the undercoating grins through, or, if coated on so thickly as to prevent this, will not dry properly. The inside of the bath should have been well cleaned, treated with two coats of hard-drying paint, and then two thin coats of bath enamel, after which it should stand a week before hot water is allowed to run into it. It will now be best to employ a paint solvent to remove the coats already applied; then cleanse thoroughly and start again. If a really good result is wanted, however, the bath should be stove-enamelled. This cannot be done without sending the bath away. G.

Building Line Question.

SUBSCRIBER writes: "Plans for a store-room, 20 ft. by 12 ft. by 8 ft. high, to be erected on what was a front garden space, were disapproved by the authorities, subsequently amended, and again disapproved; the store-room, however, was erected. The Corporation now threaten that if it is not taken down they will remove it themselves, charging the owner with the cost of so doing. The official objections are that it is proposed to bring forward the front of the building beyond the building line, and that the building is under the footpath. The structure, it may be stated, would be within 21 ft. of the middle of the back street. The question is: What is the building line? Some of the Corporation buildings are themselves much in advance of this store-room, and there are others which are under footpaths and roadways.

"In your issue for October 4th you state: 'It is impossible for a lessee legally to dedicate land for the use of the public': does this also apply in the present case? The property is held on a 99 years' lease."

—After inspecting the plan and section [not reproduced], and after perusing the bylaws and extracts from the local building acts, I find nothing at all to prevent your client from building the store-room exactly as proposed. I am of opinion: (1) That there is no building line in the back road other than the back line of the pavement. (2) Section 69 of the 1871 Act prescribes seven yards from the centre of an existing street as the minimum distance at which a building may be erected to front that street, but I have grave doubts as to whether this restriction applies to a "back street" (24 ft. wide only) laid out under Section 93 of the 1865 Act, or under Section 49 of the 1900 Act; in fact the latter section lays down another set of rules as applicable to such "back streets." (3) I cannot see that the store-room is under any public footpath; it appears to be merely under the portion of your clients' own premises which forms the approach to the shop to which the store-room itself is attached.

I find nothing in the by-laws to prevent the erection of such a building (not being for purposes of human habitation)—it is in fact a cellar, and should be regarded as such. One of the following courses of procedure may be taken: (a) You may await the proceedings of the Corporation, defending your case if and when it arises; (b) you may apply to the High Court for a "mandamus" to compel the Corporation to pass the plans, upon the plea that they are in accordance with the existing by-laws, and that the refusal to pass them is unreasonable and arbitrary.

In reply to your query about dedication, the quotation you make from the "Architects' and Builders' Journal" is quite correct. It does not at all matter how long a leaseholder's interest in a property may be; he cannot dedicate land to the use of the public and so prejudice the freeholder when he enters again upon his property upon its reversion to him or to his heirs.

F. S. I.

Books Wanted.

W.E.F. (Newcastle-on-Tyne) wishes to know where he can obtain Scratchley's "Practical Hints for Officials of Building Societies," and any good book (other than Gee's) on the keeping of building society accounts. Perhaps some reader may be able to supply the required information.

Questions on Hydraulics, and Bonding Brick Chimney.

HYDRAULICS writes: "(1) The accompanying diagram shows a tube, 6 ft. in diameter, approaching smaller diameter tubes formed in a bell mouth to take this extra width. Will the two combined lines of 3 ft. diameter deliver the same amount of water as the 6 ft. diameter tube when running full? According to the Venturi meter system the hydraulic head would decrease from A to B, but would the velocity increase? Should the area of the 3 ft. diameter tubes be equal to the area of the 6 ft. diameter tube to deliver the same quantity of water? If running three-quarters full, will the level be approximately the same at the end B as at A? What book on hydraulics would give information on the above problem? (2) What bond do you consider best for brickwork in the foundations of a brick chimney, faced with stone above ground? The walls, are, say, 4 ft. 6 in. thick. Above ground, where faced with walling, the usual bond is given as three courses of stretchers to one of headers. Could this 3 to 1 bond be carried down into the foundation?"

—The principle of the Venturi meter does not apply to this case, in which the length of the constricted portion amounts to 60 ft. There is nothing in the information supplied to show how it was proposed to attempt to apply the principle, and the erection across the end of the 6 ft. diameter pipe of a vertical head wall containing two 3 ft. diameter pipes built in to carry the flow of the 6 ft. pipe is a very undesirable form of construction, which would materially decrease the discharging capacity of the smaller pipes. As the gradient of the 6 ft. pipe is the same above as below the constricted length, namely, 1 in 1760, then the water will flow at the same depth, measured from the invert, in each portion, whatever the quantity of water passing through. The two 3 ft. pipes will not discharge as much as the 6 ft. pipe, and their diameter should be increased to at least 4 ft. 6 in., or 4 ft. 9 in. When flowing full the velocity in these pipes would be about 3¼ ft. per second, while the velocity in the 6 ft. pipes would be nearly 4 ft. per sec. In order to obtain the greatest efficiency tapering connecting pieces, about 8 ft. long, should be built at each end so that the cross-sectional area evenly and gradually diminishes from the large pipe to the two smaller ones. Messrs. Geo. Kent, Ltd., of High Holborn, are makers of the Venturi meter, and reference may be made to their catalogue, as also to Neville's Hydraulic Tables (Crosby Lockwood and Son, 14s.).

With regard to the second question, where the foundations of a chimney shaft consist of brickwork right across the area, the bricks are usually laid all headers, changing the direction in each course at right angles to the previous course; but where the foundations are carried round under the walls only, they are built as for ordinary walls, that is, in heading courses facing outwards on each side of the base. The base of a circular chimney is usually made square, and still more often does this apply to the foundations. The increased number of stretching courses in the upper part of a circular chimney shaft are to reduce the labour of making the headers wedge-shaped.

HENRY ADAMS.

Paving New Streets.

L. G. B. writes: "I am the owner of a pair of villas fronting a public highway. The pavement in front of them has never been made up. The local authority say they will carry out the work if I pay the difference in cost between blue brick and concrete slabs. A by-law was passed about three years ago stating that pavements of all new streets must be formed of concrete slabs. I have refused to pay, and the Council, in the meantime, at their own expense, have laid the channels and kerbs and formed the pavement of ashes."

—A by-law to the effect that the pavements of all new streets must be formed of concrete slabs is unusual, but not ur reasonable. I believe that such a by-la is good and binding in law, as no doub it has been approved by the Local Goverr ment Board. The original offer by th sanitary authority to you was presumabl not accepted at the time, and one ca hardly expect such a proposal from public body to be kept open very long Apparently all you are now called upo to do is to keep quiet; the action of th authorities in laying channels and kerl tends to show that they intend ultimatel to take over the new street, free of e pense to the frontagers.

F. S. I.

NEWS ITEMS.

From Vatican to Veldt.

Mr. G. A. Hamilton Dickinson, M.V. F.R.I.B.A. (of Johannesburg), who h been attending the International Congre of Architects at Rome, returned to Lo don last week and proceeds to Sou Africa by the next mail boat.

Hampstead Garden Suburb Free Chur

The new inter-denominational Fr Church in the Central Square at t Hampstead Garden Suburb was open last week by Mr. Herbert Marnham, t treasurer of the London Baptist Assoc tion. Mr. E. L. Lutyens, F.R.I.B.A., the architect. The cost of the chur up to the present has been £12,000.

Dissolution of Partnership.

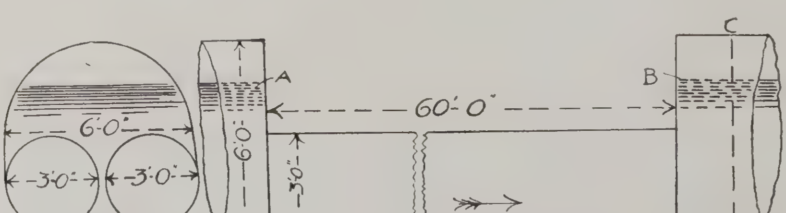
It is announced that the partnership he tofore subsisting under the style of Fie Sons and Glasier, surveyors and est agents, of Borough High Street, S.E., a Waterloo Place, S.W., has been dissol as from September 29th last. Mr. Fi will continue the business under the style of Field and Sons, and Mr. Willi Glasier will practise as a land agent a surveyor at No. 17, Pall Mall East, S. under the name and style of Mr. Willi Glasier.

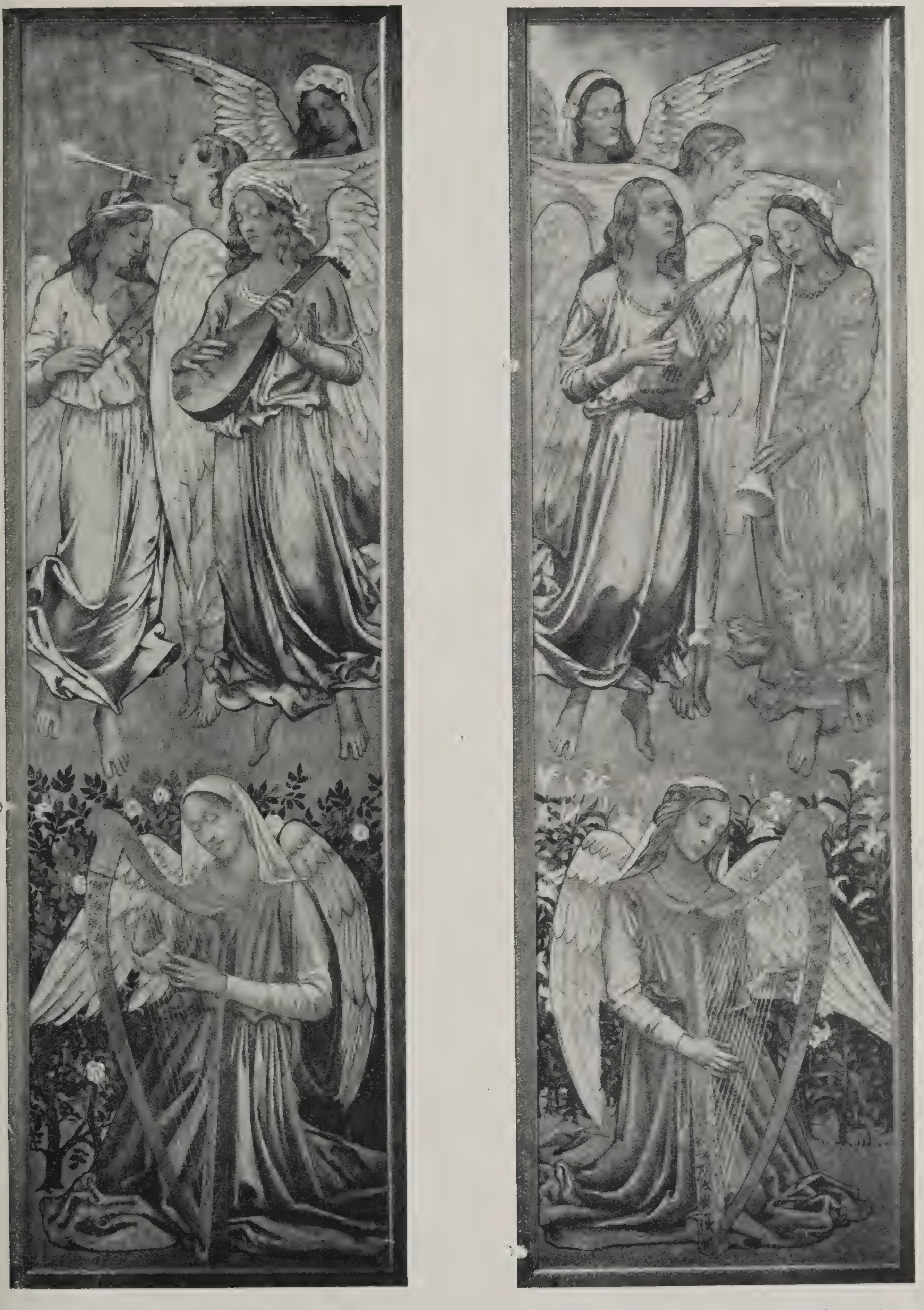
Tramways Over St. Paul's Bridge.

In connection with the proposed ap cation to Parliament in respect of the c struction of tramways over St. Pa Bridge, the Tramways Committee of London County Council report that it be necessary to furnish an estimate Parliamentary purposes of the cost of construction of the open approach to subway, and also of the cost of cars, e trical equipment, etc. The cost of open approach to the subway, estimate £15,000, will be borne by the City Cor ation, and the cost of cars, equipment, is estimated at £37,880.

A Central Tower for the Abbey!

Lecturing at the Camera Club last w Mr. E. W. Harvey Piper, M.S.A., s according to the "Pall Mall Gazette," no lover of architectural symmetry w be satisfied until a great central tower, that of Gloucester, Lincoln, or Canterb crowned Westminster Abbey. He belie that one day this would be erected, spite of the failure of three previous tempts, notably that of Wren, w "horrible design" showed that he inten a sort of glorified Bow Church spire. T Wren had no sympathy with Gothic w in his own country was proved by his e tion of the two inadequate Western tow





These two panels were designed and painted by Mr. Robert Christie for an organ designed by Mr. Norman Shaw R.A., and erected in Thurstaston Church, Cheshire. The panels are painted in oil upon a gold ground, and decorate the doors which stand open on each side of the pipes.

DESIGN FOR PAINTED PANELS ON AN ORGAN CASE. BY ROBERT CHRISTIE.

COMPETITIONS.

New Public Baths, Barnsley.

The assessor's awards in the architectural competition for the new public baths at Barnsley, for which 25 sets of plans were sent in, have been announced as follows:—1, Mr. Burgess, London; 2, Messrs. Bowden and Wallis, London; 3, Mr. E. W. Dyson, Barnsley.

Manchester Art Gallery and Library.

At a meeting of the Manchester City Council last week, on the motion for the adoption of the report of the Special Committee on the old Infirmary site, the selected plans for a new reference library and art gallery were the subject of considerable discussion. Mr. Alderman Holt desired to know if approval of those plans committed the Council to any policy. Mr. Hibbert moved that the discussion be adjourned for three months.

Mr. Alderman Holt: Will the Town Clerk assure us that we are in no way committed by passing this report? The Town Clerk: I can readily do that. In passing the report the Council accepts No. 4 design as the best out of ten. This does not commit the Corporation to the erection of any building at all. All you are bound to is the payment to the successful architect of a certain premium of one thousand guineas. Mr. Cook said, with regard to the question of site, that the original buildings above ground covered only 4,958 square yards, whereas it is now proposed to cover a somewhat larger area. Mr. Taylor said that if the plans were accepted and it was found that the stipulation placed upon the architects had not been fulfilled the Council would find themselves in an awkward position. He asked that the matter should be referred back to the Infirmary Sites Committee in order that it might be more fully gone into. The Lord Mayor said that no great hardship would be caused if the matter were postponed till the December meeting of the Council. He suggested that that course be adopted, and to this the meeting agreed.

LIST OF COMPETITIONS OPEN.

NOVEMBER 6. TRAINING COLLEGE, GLASGOW.—The Glasgow Provincial Committee propose to erect at Jordanhill, Glasgow, a training college to accommodate 1,200 students, and invite architects willing to take part in the competition to send in their names by the 6th November to the undersigned, with twenty copies of a statement containing such information as they may think likely to advance their claims.—D. Macleod, Director of Studies, Technical College, Glasgow.

NOVEMBER 30. TECHNICAL INSTITUTE, CARDIFF.—The Cardiff Education Committee invite architects to submit competitive designs and estimates for a technical institute to be erected in Cathays Park, Cardiff. Mr. J. S. Gibson, F.R.I.B.A., has been appointed assessor. Full particulars may be obtained from John J. Jackson, Director of Education, Educational Offices, City Hall, Cardiff, on deposit of £2 2s.

NOVEMBER 30. HOSPITAL, HASTINGS.—The Joint Committee of the East Sussex Hospital and the King Edward VII. Memorial Fund invite architects to submit competitive designs, etc., for the proposed new hospital. Mr. Edwin T. Hall, F.R.I.B.A., of 54, Bedford Square, London, has been appointed assessor. Conditions and instructions may be obtained from Mr. W. M. Rhodes, East Sussex Hospital, Hastings, on deposit of £1 1s. Premiums of £125, £75, and £50 are offered.

JANUARY 31, 1912. FEDERAL CAPITAL CITY, AUSTRALIA.—Competitive designs are invited by the Commonwealth of Australia, for the laying-out of the Federal Capital City. Premiums are offered as follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered by January 31st, 1912, to King O'Malley, Minister of State for Home Affairs, Commonwealth of Australia.

JANUARY 20, 1912. STATUE AT HAVANA.—Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana, before January 20. The sum of 100,000 pesos (about £20,600) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., where also further particulars (in Spanish) may be seen.

JANUARY 29, 1912. GOVERNMENT PALACE, MONTEVIDEO.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640, and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

JULY 1, 1912. CITY EXTENSION SCHEME, DUSSELDORF. — Premiums £1,000 and £375. Particulars from the Chief Burgomaster, Dusseldorf.

Memorial to the Emperor Frederick at Aix-la-Chapelle.

The unveiling of the statue of the Emperor Frederick which has been erected at Aix took place on the eightieth anniversary of the birth of that Emperor. The ceremony was attended by a distinguished company, including the Emperor and other Imperial and Royal personages, Ministers, and Belgian and Dutch deputations. The Burgomaster delivered a speech and the Emperor William then gave the signal for the unveiling. The large equestrian statue is the work of Professor Lederer.

Street Lighting in Paris.

Trials have recently been made in Paris with several systems of lighting by means of pressure gas. The Boulevard Raspail has been furnished with an installation of 88 lamps of 2,000 candle-power each, and 28 lamps of 4,000 candle-power each. The gas before use is pumped up to a pressure of 55 in. of water by means of two independent rotary blowers, placed in an underground chamber. One blower is driven by an electro-motor, and the other by a gas-engine. The cost of illumination by this system is stated to be less than one-third of the sum usually expended on lighting by means of arc lamps. The lighting of the whole series of gas lamps is effected simultaneously by an automatic arrangement actuated by suddenly altering the pressure of gas in the supply pipe.

TRADE AND CRAFT.

A Handbook of Electric Supplies.

Electricians and architects requiri information with regard to electrical stallations will set considerable value the "Western Electric Handbook Cables and Supplies" which has be issued by the Western Electric Compa Ltd., of Norfolk House, Victoria E bankment, W.C., in which are contain not only illustrated lists of the compan cables and supplies, but also a great d of useful information that is of comm application. The Wiring Rules of t Institution of Electrical Engineers, w extracts from the Board of Trade regu tions and the Home Office rules for f tories and workshops are usefully inc porated and indexed for ready referen the Phœnix Fire Office rules for elect light, electric power installations, a telephones, heating installations, etc., a also given at length, as well as the rep of the Departmental Committee appoint to consider the working of the existi rules for the use of electricity in min A considerable section of the book is tak up with various reference tables, such the British standard sizes of annealed hi conductivity commercial copper condu tors, thicknesses of dielectric and le sheathing, and of armouring and ju serving, particulars of copper conducto various formulæ, equivalents of Briti and foreign weights and measur decimal equivalents, comparative scale thermometers, etc. The information co cerning the company's system is ve full, and is accompanied by a series interesting illustrations, many of whi give views of important Government a other contracts that have been carried by the company. But, as we have su ciently indicated, it is more than a ca-logue—it is an exceedingly useful wo of reference.

Carron Gas Fires ("Abbey" Series).

An illustrated list of the Carron Co-pany's new "Abbey" series (Carron Co-pany, Carron, Stirlingshire) of gas fi shows eight distinct designs, which, w their different sizes, afford a selection twenty-one varieties, supplied in ma artistic finishes. The designs are resp tively named the Incholm, Dunfermli, Lincluden, Lindores, Newbattle, Kel Kilwinning, Cambuskenneth, Ma-borough, and Buckingham. All the designs are decidedly neat, and some them may be rightly described as chas and thus justify the company's claim th they are free from the overcrowded orn-mentation that is sometimes met with modern gas-fire designs. All the pa of the "Abbey Series" are interchang-able, and gas connection can be ma either right or left hand, as desired. small extra cost, several of the patter can be fitted on top with a boiling-burn and are also provided with the specia designed Carron pillar fuel, affording t maximum radiation, while enhancing t appearance of the fire. The compan reputation of 150 years is a suffici guarantee of strong and substantial co struction, while the prices are extrem moderate. The production of this exc-lent series of gas fires affords yet furth proof of the continuous growth in po larity of this system of warming apa-ments—a system that offers many adva ages, notably those of control of temper ture and cleanliness in working.

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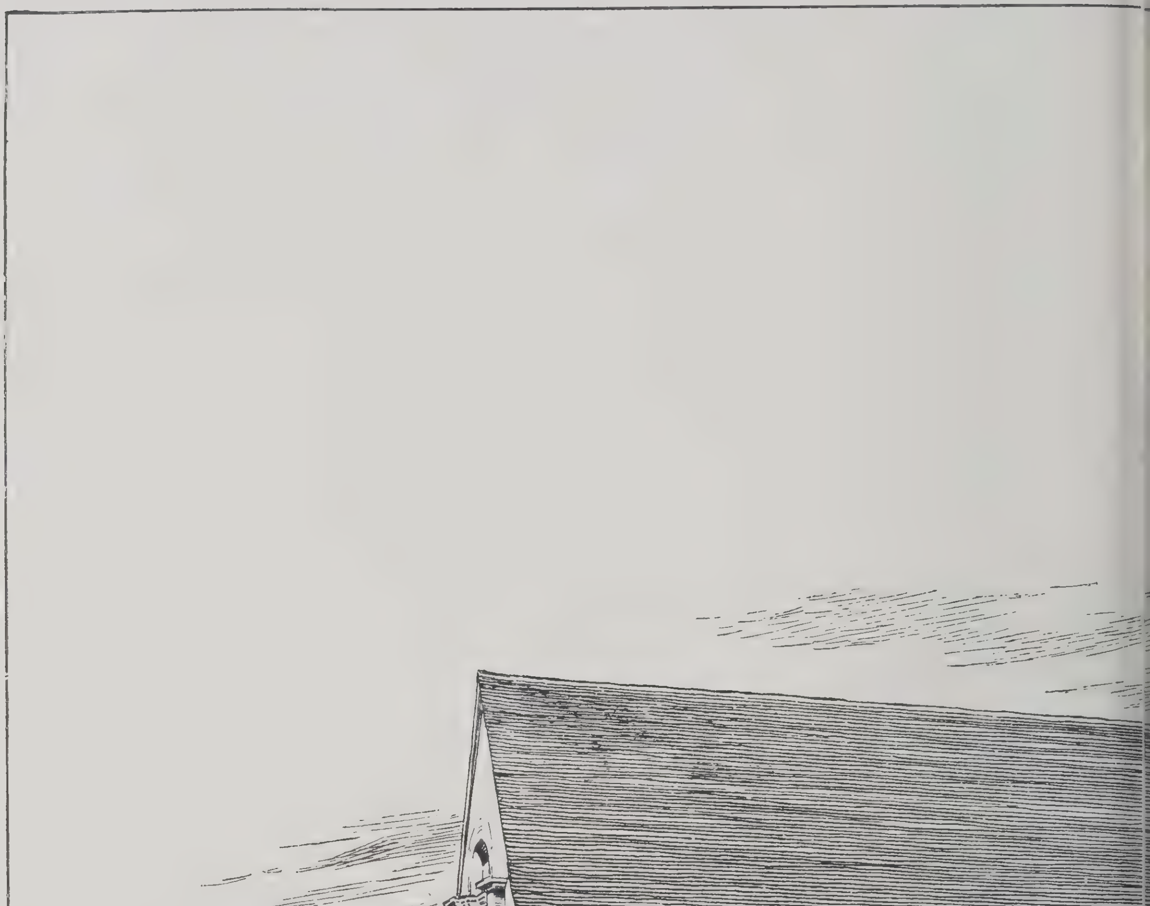
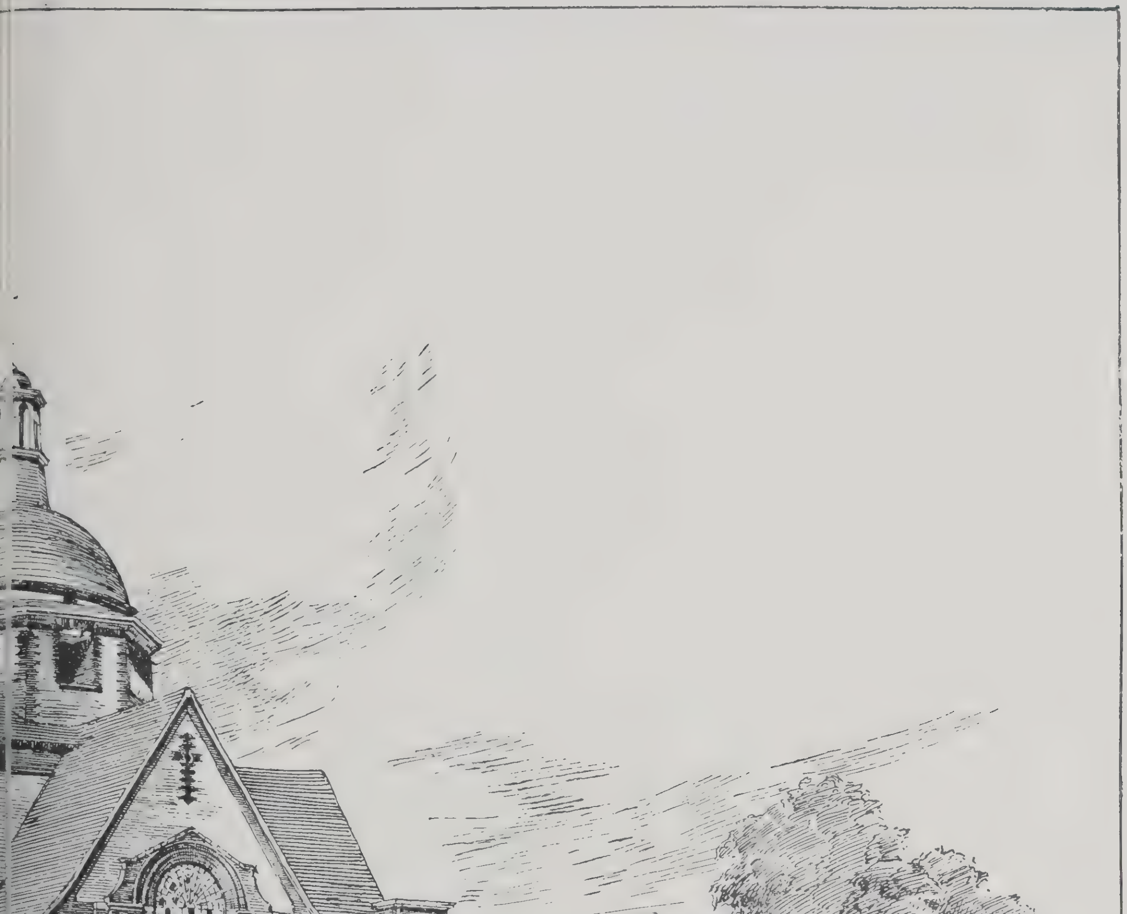
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, November 8th,* 1911.



THE FREE CHURCH AT THE HAMPSTEAD GAR



EDWIN L. LUTYENS, F.R.I.B.A. ARCHITECT.

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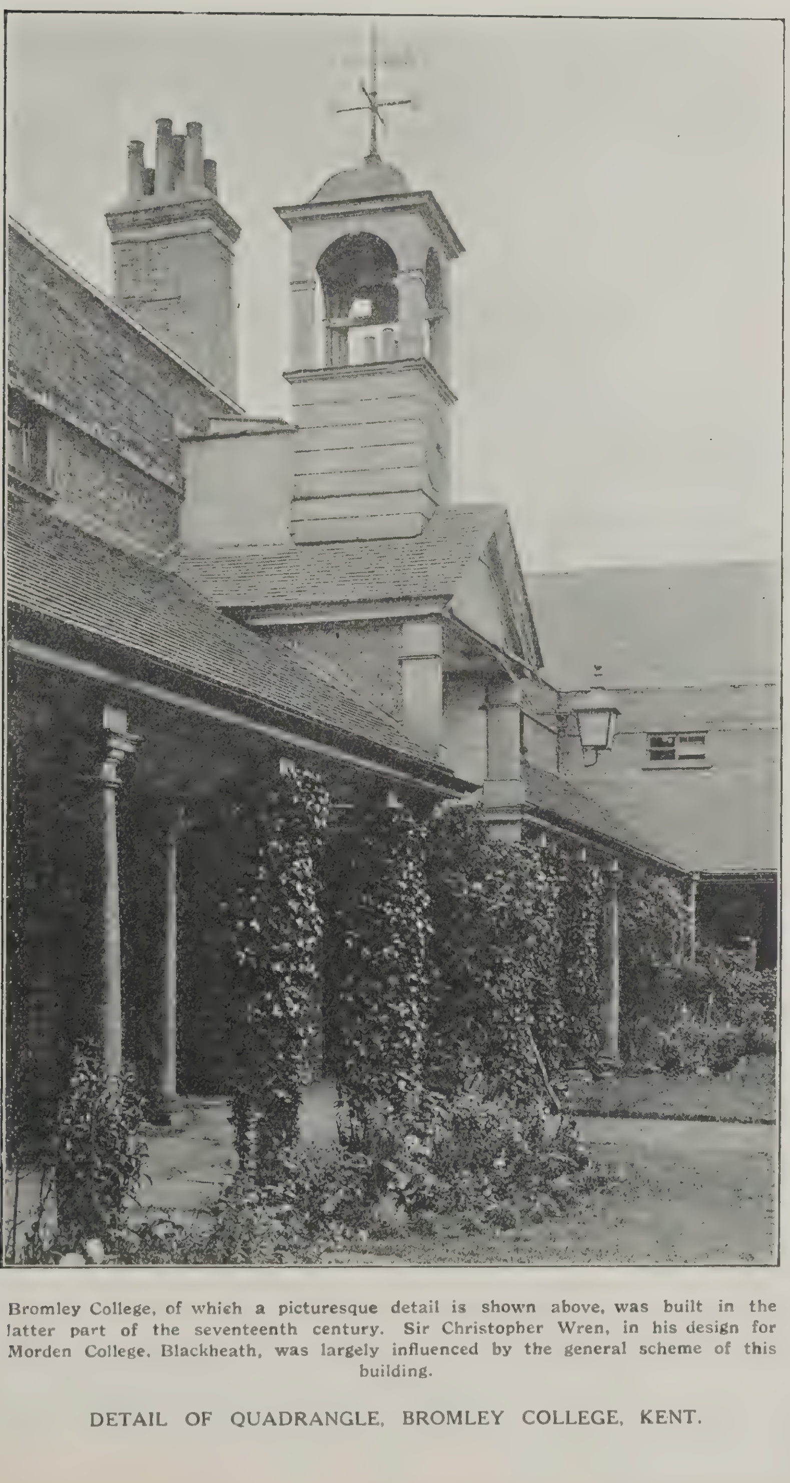
THE ARCHITECTS' &
BUILDERS' JOURNAL.

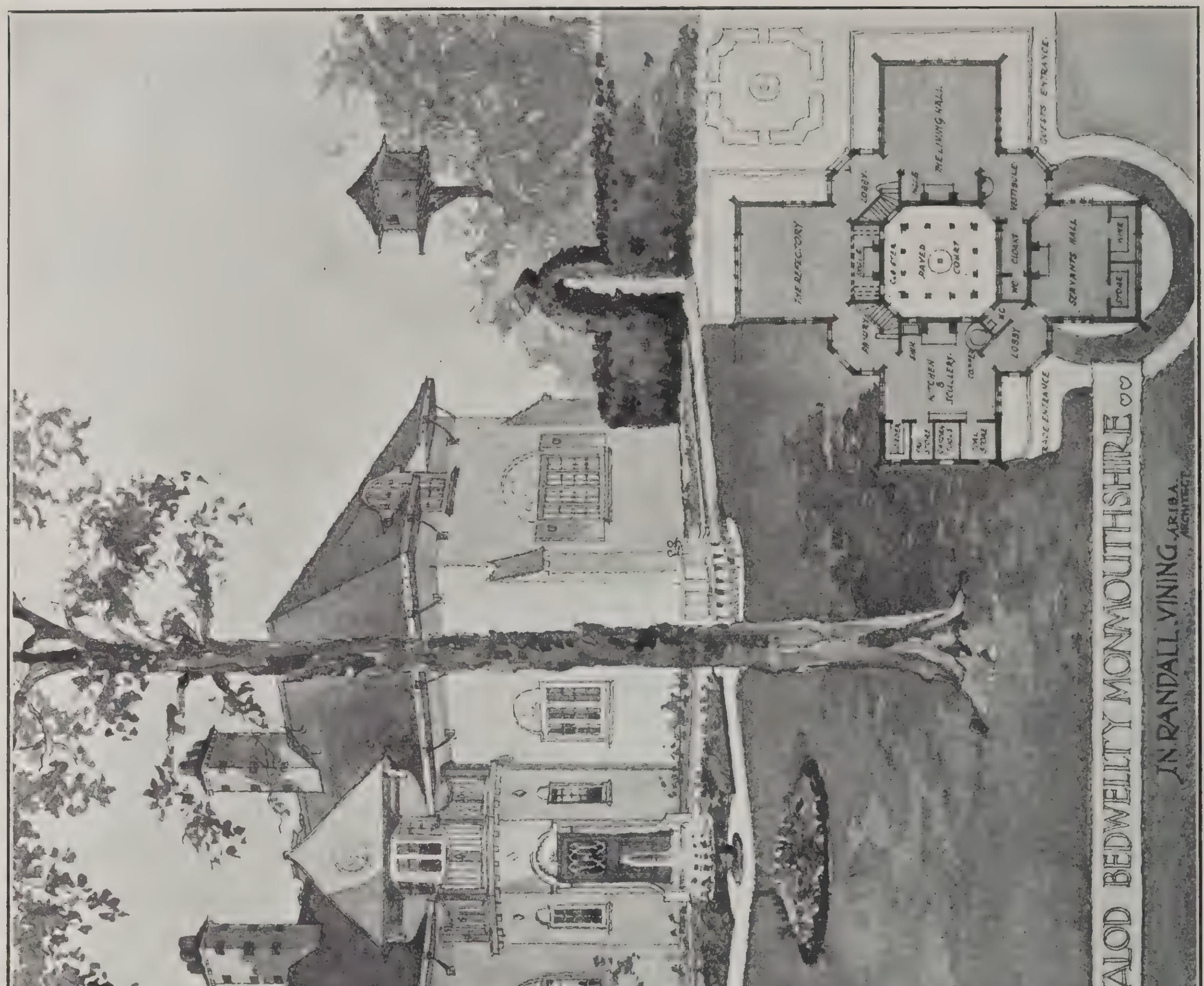
WEDNESDAY,
NOVEMBER 8th, 1911.

Volume XXXIV. No. 876.



Bromley College, of which a picturesque detail is shown above, was built in the latter part of the seventeenth century. Sir Christopher Wren, in his design for Morden College, Blackheath, was largely influenced by the general scheme of this building.

DETAIL OF QUADRANGLE, BROMLEY COLLEGE, KENT.



This house is to be built of brick, rough-cast, with red tiles on the roof, and all woodwork of oak. It is a bachelor's establishment.

THE ARCHITECTS' & BUILDERS' JOURNAL.

NOVEMBER 8th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 876.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

How to Write About Architecture.

WE have seen more than once recently, in the columns of one or two of those few daily papers which can regard artistic subjects as worth thoughtful consideration, the complaint that writers on architecture do not contrive to make their subject interesting to readers generally, and the reason is, in one instance at least, that architecture is treated as y technical subject, "entirely self-contained"; that it ly made a question of development of structure in a ical sense, without any regard to its relation to human ngs and human history. Architects, we are told, complain the public do not take interest in their art, and the reply ow can they when so little is done by writers on architec- to make the subject interesting to the public?

ere is some truth in this, though it is not exactly the e truth. It must be confessed that architectural books, rule, are in a literary sense rather dull reading. But re judging them in this respect, one has first to consider her a book is one that is intended for the professional itect or for the general reader; for the requirements in the cases are rather different. When an architect takes up a upon any special phase of architecture, structural, tic, or historical, what he wants before anything else is rate and reliable statements of fact. As far as structural ers are concerned these will necessarily be entirely ical; they could not be expected to interest, or even to ry intelligible to, the lay reader. Willis's celebrated paper othic vaulting, for instance, is of the greatest interest and to architects, but we doubt whether any non-professional er, unless he had some special knowledge of or interest oblems of structure, would find it very entrancing reading; if he understood it, he would pronounce it dry and desti- of enthusiasm. On the other hand, to the architectural nt any enthusiastic or poetical reflections on the artistic ty of Gothic vaulting would have been a mere encum- ce on the essay, and a waste of space; he has (we may ose) all that himself; what he wants is to understand ly how it was done; but that is not interesting to the ral reader. There is a parallel to be found in regard to branches of art. We knew of a case in which a well- n writer on music, who was to contribute a review of a cal work to a magazine edited by a very eminent literary was asked to consider, in the course of his review, the ns why writings on musical subjects were always so dull, lullness being assumed as a matter of course; the eminent r not including any knowledge of that art among his many lectual acquirements. The contributor naturally replied he did not accept the major premiss, as to his mind every f information about music was interesting. The case is ame with architecture; an architect ought to find every new about architecture interesting in itself; but the general er wants to have it put in an interesting and picturesque ner; failing that, he concludes that architecture is a dull ct.

Now, a considerable proportion of the books that are published on architectural subjects are intended to claim a circulation beyond the professional circle; without the hope of that they would probably not be published at all, as their sale would not be remunerative. And the impression seems to be that such books, though they may be purchased by those who think that a little knowledge of architecture is desirable for an educated man, are too often dull, either in their own literary style or in the manner in which they treat architecture, and consequently that they do not assist as they might in promoting public interest in the subject.

We are inclined to think this is true; and it is a pity, considering the importance of promoting public interest in architecture, that it should be so.

What are the reasons why it is so? There are probably two principal ones: defect of literary style, and defect in the manner of setting out and treating the subject. In regard to the first, there is nothing to be done. If a man has not inborn in him the power of picturesque and striking literary expression, no teaching will give it him; it is a case of *nascitur, non fit;* and those who undertake the writing of books on architecture are mostly (there are some brilliant exceptions) men who have not paid any particular attention to literature as such; they simply wish to put their knowledge of architecture into writing, for their own benefit and that of the public. And in that case it is much better for them not to attempt to be "literary"; the results are not likely to be satisfactory; there is nothing that jars more on the sensitive reader than "fine writing" put in because the author thinks there ought to be something of that kind. It is much better to follow the principle expressed with delightful naïveté by the author of an excellent treatise on carpentry, published a few years ago, who said in his preface that the reader must not expect to find anything of literary merit in the book, "his sole object having been to express his meaning clearly." If people only knew it, the simple endeavour to express your meaning clearly is one of the most straight avenues to the acquirement of a good style—at all events to the avoidance of a bad one.

The other point, as to the method of setting out a subject, is one in which improvement on the usual existing methods is possible. Most of the books on architecture written for the general public are more or less historical; either the general history of architecture, or the history of a particular phase or period. The defect of nearly all the popular histories of architecture is that the subject is cut up into divisions or "styles," separated by hard and fast lines and dealt with in separate chapters, as if each were a separate problem. That system not only gives a false idea about architectural history, but it deprives the reader of the really interesting spectacle of the manner in which one style grew out of another by imperceptible degrees, so that there is no point where you can put down your finger and say, "Here this style ended and another began." Architecture cannot be tied up in bundles and labelled and pigeon-holed in that fashion; it is a continuous stream of development, and ought to be shown as such. Then there is also the fault, complained of by the newspaper critic to whom we have before referred, of treating architecture as if it were "entirely self-contained," a phenomenon apart from men's lives; which has never been the case. The most concise history of architecture—anything which assumes to be more than a mere dated catalogue of facts—should endeavour to give an idea as to the social and intellectual conditions under which any phase of architecture arose.

It is almost impossible to speak of architectural histories without thinking of Fergusson's monumental work, a book never to be mentioned without respect, which was the result of years of unremitting and conscientious study on the part of a singularly clear-headed and logical intellect. It may be cited as an example both of merits and defects in architectural writing. Although it is almost unavoidably divided into sections and chapters on different styles, since the subject was too vast to be grasped without such division, Fergusson has always clearly before his mind the relation of architecture to race, to national life and national manners and beliefs. In that respect his work deserves the highest praise; and moreover, except in regard to some points on which more recent information has been obtained, it is in the main exceedingly reliable, and no pains were spared to make it so. On the other hand, it can hardly be maintained that it is an interesting book. Its author was a hard-headed student of facts, with a certain dry humour which appeared more in his conversation than in his writings, and a dogged belief in his own views on any disputed question which made him one of the most obstinate of opponents in an argument. But he does not appear to have had a spark of enthusiasm; and that is where his great work, however valuable in an historical sense, leaves its readers cold.

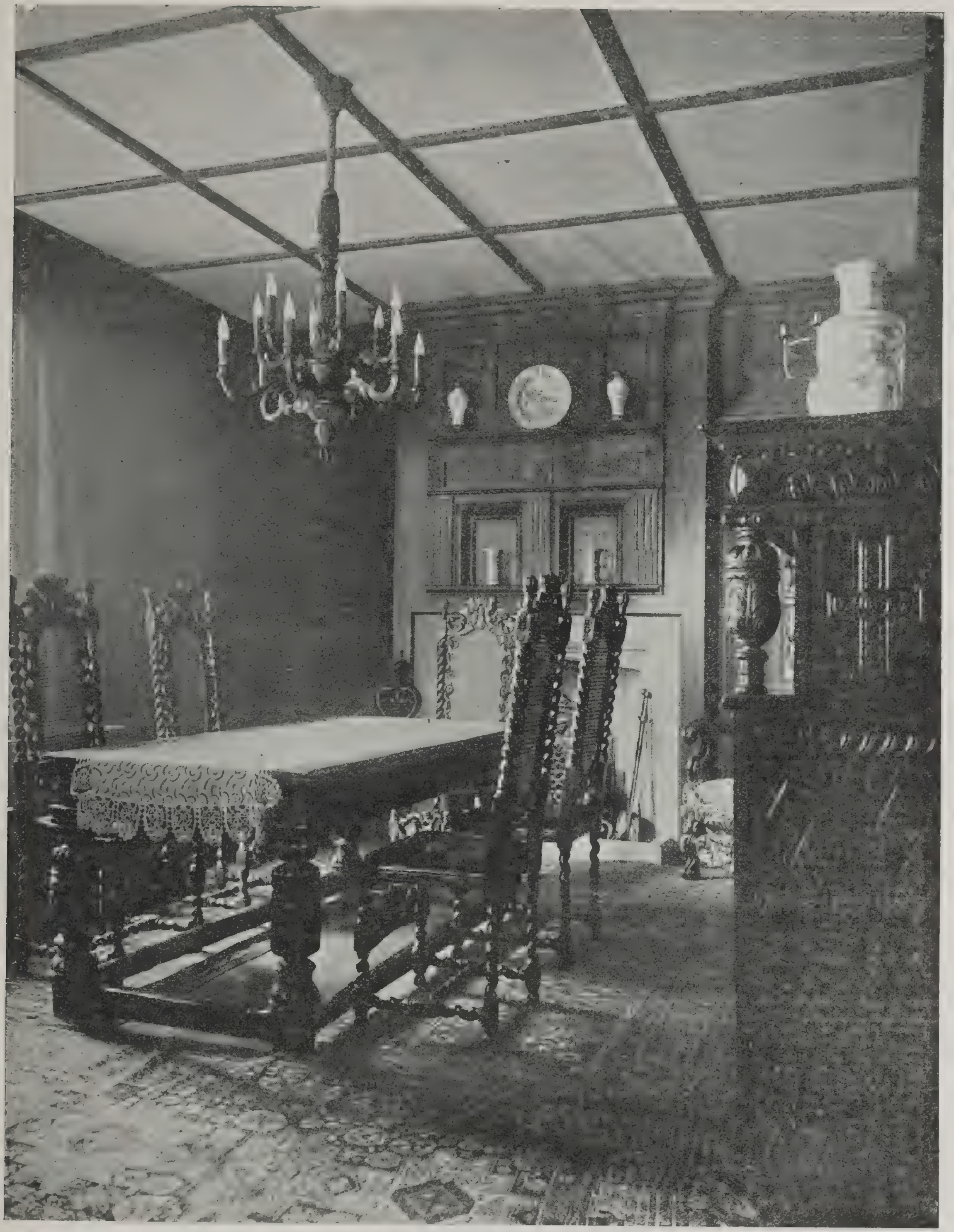
In fact, enthusiasm for the subject may be said to be the third main desideratum for rendering books on architecture interesting to the general reader. That was the secret of Ruskin's power; he had not only the natural gift of literary expression in an exceptional degree, but he had an enthusiasm for his subject which communicated itself to the reader's feelings. It was owing mainly to this quality that he was the first English writer on architecture who really interested the public in the subject. He was often wrong in his facts and his conclusions; his "Stones of Venice" is full of disproportionate enthusiasms and false analogies; his "Seven Lamps" advances many theories which are much open to question; but it does make the reader feel that the subject is a great one. His early work, "The Poetry of Architecture," which is little remembered now, but is one of the most remarkable books ever written by a youth of eighteen, is perhaps even better than these, for it has the same enthusiasm for the subject, but is more reasonable and less burdened with paradoxes than his later writings. But perhaps, with all his questionable positions and theories, Ruskin showed us the true way to create interest in writings on architecture—to write of it with enthusiasm.

Balliol Chapel, Oxford.

IT is somewhat more than surprising to learn, from a letter in the "Times" signed by Mr. Norman Shaw and Mr. Basil Champneys, that the Master and Fellows of Balliol College have resolved to pull down Butterfield's chapel, merely because they do not like the architecture, or a benefactor of the College (who is referred to) does not like it. We call it more than surprising, because it is a proceeding, as far as we know, without precedent, to destroy the work of an eminent architect of quite recent date, and because it is a very great injustice to the memory of Butterfield, who, if he did not quite merit the rather enthusiastic phrase used by Messrs. Shaw and Champneys, that he was "the greatest genius of the Victorian age" (the greatest in architecture we suppose was intended), may be said to have been almost the only architect of the Gothic Revival whose churches still maintain their original interest. Butterfield was not a mere copyist; he put something of his own into his Gothic churches, and such buildings as All Saints', Margaret Street, and Babbacombe Church, Devon, still have a charm of their which has evaporated from Scott's merely learned repro tions of Gothic forms. We hope the Balliol College auth ties will consider the matter afresh, before carrying out is justly characterised in the letter referred to as "a wa act of destruction."

Proposed Conference on London Street Name Plates.

UPON many occasions we have drawn attention to necessity for clearly indicating the names of Lo streets. We now see that the Royal Institute is mo in the matter, and is circulating among the borough cou a letter pointing out that whilst in Paris every street co bears the name of the street, in London there are hund of corners where no name at all is to be found. It is t fore urged that a complete and uniform system of name-p for the streets of London should be adopted. In resp to this communication, Hackney Borough Council have t the very sensible course of pledging themselves to support R.I.B.A. if that body will take the initiative by ca together a conference of the city and borough council London. The period being the twentieth century, and place the reputedly greatest city that the world has seen movement is hardly premature, and certainly not audac On a previous occasion we have attempted to describe the case of a stranger in a London suburb trying to pick o the midst of a blinding blizzard at night, one particular from a maze of turnings in which the houses are all ex alike; and even at high noon on a sunny summer's da under any other conditions, the problem is still fraught wholly unnecessary discomfort and perplexity. It sh surely have been one of the first objects of the London Co Council, as soon as it assumed the duties and responsibiliti a central authority, to render impossible the now too com predicament of its own citizens, to say nothing of the stra within our gates, getting themselves lost in London; b their zeal for labelling the houses in which once lived mighty dead, the Council has grossly neglected its plain ob tion of helping us to find the abodes of the living, who, fo moment, may be of more vital consequence to us than a heroes of the past; as, for instance, when one is urgent need of a doctor, to whose street neither policeman nor pos (supposing either can be found exactly at the critical mo may be able to direct us. The Council compels the h holder to number his dwelling after a certain presc fashion; but nobody seems to be responsible for labellin streets, or for leaving them unnamed. The Council h failed of its parental duty, the R.I.B.A., in taking i deserves all the gratitude that is due to a fairy godm whose appearance on the scene is none the less welcom cause it is exceedingly late in the development of a rathe pantomime. Since convenience is not the only consider we would much rather receive this boon at the hands o R.I.B.A. than at those of the London County Council cause it need not be said which of these august bodies more likely to give due attention to the æsthetic side. R.I.B.A. mention "uniformity," which in this associatio deadly word. That one kind of label cannot suit all kin streets, and that the pattern chosen may be at once serviceable and perfectly hideous, the example of Edinb for instance, affords convincing testimony—and this in where the lettering on the shop fascias is, as a general a model of neatness and propriety. We shall doubtle much better in London if the R.I.B.A. is wisely allow exercise due influence in a matter on which it can advise unequalled authority. The mere labelling of the streets a sufficient regard for æsthetic propriety, however, i enough. A system of direction labels, useful, and pe ornamental, by daytime, and capable also of guiding th grims of the night, should be so arranged as not only to



A DINING-ROOM IN A LONDON FLAT.

name of a particular street, but to afford also clear indi- ction of the points of the compass and of the whereabouts the otherwise obscure tributaries of the main artery. We st that the suggested conference may materialise, and that will do its work very thoroughly.

An Essay in Flat Furnishing.

THE accompanying illustration of a dining-room in a London flat is interesting as an attempt in house furnishing which is not usual in such surroundings. The ner, with a liberal outlay, has endeavoured in this flat to ure some of the effect of a well-appointed country house, and to that end has filled his rooms (a hall, three reception rooms, and two bedrooms and offices) with a choice selection of old furniture. In the dining-room, here shown, the walls are covered with genuine Elizabethan panelling—a very good specimen of workmanship of the period. In some places the panelling still retains the wrought hinges to the portions which in their original positions formed cupboards. The work is entirely hand wrought; the panels show the marks of the adze tool, the work having been executed before the advent of the plane. All the furniture in the room is of the Elizabethan period, with the exception of the chairs, which are Charles. The tapestry is of the corresponding French period, and is of great beauty and value, the lace cover to the table being Renaissance. Altogether the effect is as delightful as it is uncommon in a London flat.

Portinscale Bridge.

A PROTEST on the part of the National Trust against the destruction of the "beautiful old bridge" at Portinscale has been the subject of considerable correspondence; and now Mr. Robert Hunter, chairman of the National Trust, finds occasion to write that it is with extreme regret that the society has learned that the Highways Committee of the Cumberland County Council have adopted the view of their sub-committee and recommended that a new bridge be built, instead of the present structure, about 50 yards further down the river. Those who have taken an interest in this controversy, he writes, are at a loss to understand on what grounds this decision can be justified. There is no demand for any new bridge. The Automobile Club, which represents that species of traffic which is most likely to profit by a widening and straightening of the present road near Portinscale, has given its opinion that "the inconvenience to traffic due to the present Portinscale bridge is very small," and that "any trifling gain there might be from a new bridge would not be compensated for by the loss of the present one." The principal residents in the neighbourhood using motor-cars agree, it is said, in this view; and though there may be differences of opinion amongst individuals, there is no evidence whatever of any general desire on the part of the inhabitants of Portinscale or Keswick that the old bridge should be superseded. It is urged that the traffic over the bridge is very small, and that with the example of Grange Bridge before them the council cannot deny that any structural defects in the present bridge can be cured by grouting. The cost of a new bridge is estimated at £3,500 to £4,000, while the cost of grouting the old bridge and of improving the approaches (if any improvement be advisable) is put at £800. Why, asks the chairman of the National Trust, should any local authority under such circumstances desire at once to throw an unnecessary burden on the rates and to destroy an object of beauty in a district to which the public resort on account of its beauty?

Thurstaston: A Garden Suburb for Liverpool.

SOME further particulars of the Thurstaston Garden Suburb scheme are now available. Thurstaston, near Liverpool, is to be a seaside residential suburb. It is situated on the Wirral Peninsula, with magnificent views across the Sands of Dee. It is not proposed that the new town shall become a popular watering-place, nor is it proposed that it shall be converted into a resort for day trippers desiring a few hours by the sea. It is, says a writer in the monthly magazine, "Garden Cities and Town Planning," designed exclusively as a seaside residential suburb. There will be veranda-front houses by the sea, clustering around pretty greens, and a greensward will stretch from the sea front to the edge of the cliffs, which slope away to the sea. For those who prefer a more sheltered site than is to be found actually facing the sea, detached and semi-detached houses will be erected on a tree-lined road having immediate access to the front, but on the other side of the line. Where the land is low there will be a park of ten acres extent, where games may be enjoyed. Entering the suburb from the station will be a green plaza surrounded by a crescent of shops, and radiating from here will be tree-lined boulevards giving immediate access to every portion of the town. Whilst provision will only be made for the accommodation of such of the artisan class as may be locally employed, semi-detached houses will be erected both for the middle class of moderate means desiring gardens which can easily be kept in order without expense, and also for others who, better off, may desire the isolation of one, two, three or four acre plots. It is proposed that these latter should occupy the rising ground to the rear, and that whilst the style of the development will be somewhat formal in close proximity to the front and to the station, th formality will, as it were, melt away towards the ancier village of Thurstaston; and, as the suburb extends into th hills, these informal roads will be picturesquely designe without side-walks or kerbs, and will have grass bordere margins. The design for the lay-out has been prepared in th School of Civic Design, Liverpool.

Proposed Cathedral for Dunedin.

A FEW years ago the diocese of Dunedin, New Zealan received a bequest of about £27,000 towards th building of a cathedral for Dunedin. One of the co ditions of this bequest, however, was that a part of su cathedral, to cost not less than £20,000, should have be built before the benefaction could be claimed, and shoul this not have been accomplished within the lifetime of a ce tain individual the money would be lost to the dioces Towards this object the sum of £10,000 has been raised, ar promises for the payment by instalments of about £5,0 more have been obtained. The Primate of New Zealar is now in England appealing for funds, and hopes to be p into a position to lay the foundation-stone of this cathedr on his return to Dunedin. He pleads that in a country which most of the churches are small wooden buildings, wit out even a tower or spire to distinguish them, a building which the solemn dignity of religious worship may adequately represented becomes of great moral and spiritu value.

The Osireion at Abydos.

THE chief work of the Egypt Exploration Fund duri the coming season will be the continued excavation the Osireion at Abydos, a great subterranean buildi connected with the Temple of Seti. Its excavation was beg in 1902-1903 by the Egyptian Research Account, the wo being conducted by Miss Margaret Murray and Mrs. Pet under the general supervision of Professor Petrie. Miss Murr discovered that the building, at first thought to be the to of King Meneptah, the supposed Pharaoh of the Exodus, in reality a *hypogæum*, or subterranean Temple, probab intended for the performance of the Mysteries of Osir identified with the dead King Meneptah, in the Underworl Its stone walls are covered with well-cut sculpture and hier glyphs, illustrating the "Book of the Gates." There are al representations of mythological subjects connected with t story of Osiris and the deities connected with his cult. far as excavated, says a correspondent of the *Times*, t Osireion consists of a broad way descending to a great ha out of which open a large chamber and a passage or seco hall leading in the direction of the Temple of Seti. T manner of junction of the subterranean Osireion with the S Temple remains to be discovered, and the work may clear many obscure mythological references, besides making a c siderable addition to our knowledge of Egyptian architectu The work will be carried out by Professor E. Naville, Ph.I etc., assisted by Mr. T. E. Peet, M.A. (Oxon.), late Crav Fellow.

Sir Arthur Church's Preservative Work.

SIR ARTHUR CHURCH, who, after thirty-two years service, has just retired from the Chair of Chemist to the Royal Academy, has, as our readers are w aware, played a great part in preserving and restoring so of the historic buildings and frescoes in London and el where. "It has been estimated," said Sir Arthur to a "Da News" representative, "that something like a million to of sulphuric acid are annually discharged into the atmosph of London. The effect of this is most destructive to buil ngs, pictures, and statues alike. For many years I have had nder my care the wall paintings by Cope, Maclise, Ward, nd others in the Houses of Parliament, and we have been nabled to devise a means of preserving the colours and strengthening the decayed plaster on which they were painted." Numerous stone buildings have been treated by Sir Arthur with what is described as the "Baryta process." This consists in covering them with a colourless solution which resists the influence of sulphuric acid. He recommends that all statues, of both bronze and marble, should be submitted to this treatment immediately after they are set up. In this way many, if not all, of the grotesque effects produced by the ravages of time might be avoided. Such famous buildings as the Chapel at Holyrood Palace, the Bodleian Library at Oxford, the Chapter House at Westminster, and the decorated ceilings of the Queen's House at Greenwich, owe a renewed lease of life to Sir Arthur's treatment.

Statuary over Office Premises.

LAST week we published an editorial note in which reference was made to the objection which some members of the public had made to the statuary on the main portico of some new City offices. The premises, of which the freeholders are the Vintners' Company ("not the Drapers'," as they whimsically reminded an objector), are at the corner of Queen Street Place and Upper Thames Street, E.C., and have been erected from designs by Messrs. Collcutt and Hamp, FF.R.I.B.A., of London. The accompanying illustrations will enable our readers to realise on how small provocation the objection was made. Surely the persons taking exception to such an entirely innocent exhibition of the nude must have been humorists bent on ridiculing the ultra-puritanical mind. If that is really the case, the wags may be congratulated on a very distinguished success. Perhaps a covering of Baryta, as recommended for statuary by Sir Arthur Church in the preceding notes, would be an acceptable compromise.

Builders' Foremen's Association Pension Fund.

AT the annual gathering of the Builders' Foremen's Association, held on Saturday evening last, the Chairman, while regretting that the response to the appeal for funds on behalf of the Pension Fund had not been what was hoped for—the chief reasons for this lack of response being the appeals for funds now being made on behalf of numerous institutions, the depression of the building trade, and anxiety as to Government proposals—was able to announce that the sum of £20 had been received, including a generous donation by Messrs. Stephens and Carter, which made up the amount to a round sum. We propose to keep open our appeal for another two weeks, in the hope that many givers who have not yet responded will yet see their way to do so. At the present time the list of donations is as follows:—

Proprietors of the Architects' and Builders' Journal	£5	0	0
Stephens and Carter	2	8	0
Expanded Metal Company, Ltd.	2	2	0
Trussed Concrete Steel Co., Ltd.	2	2	0
Alfred Whitehead (Leeds)	1	1	0
The Ruberoid Co., Ltd.	1	1	0
G. M. Callender and Co., Ltd	1	1	0
W.R.	1	1	0
Burn Bros.	1	1	0
Thomas Faldo and Co., Ltd.	1	1	0
Indented Bar and Concrete Engineering Co. ...	1	1	0
Sabey and Co.	1	1	0

Further contributions to this deserving fund may be addressed to the Editor of the "Architects' and Builders' Journal" (in which they will be duly acknowledged), Caxton House, Westminster.

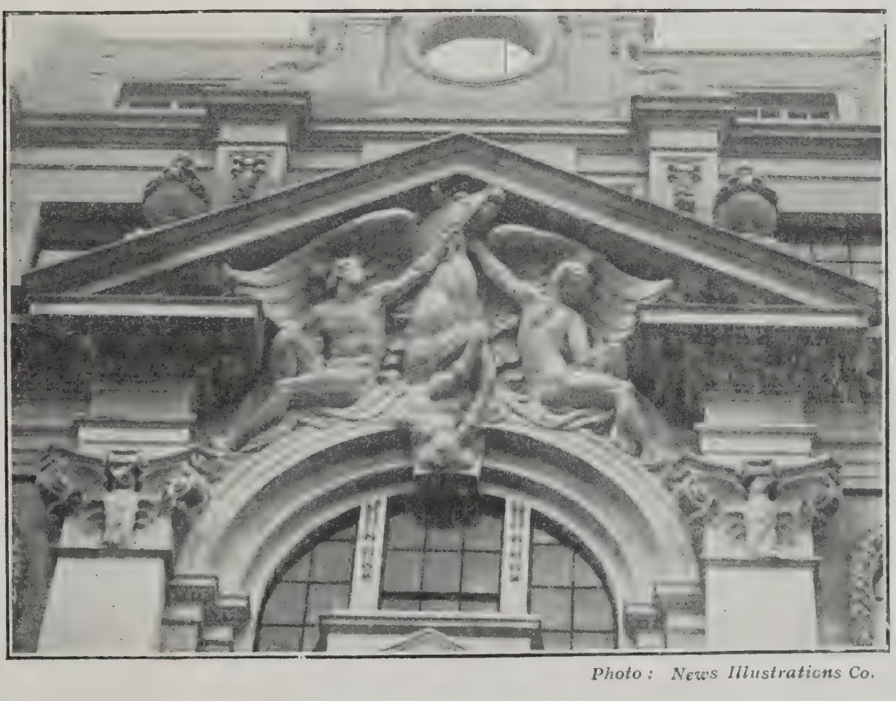


Photo: News Illustrations Co.

SCULPTURE ON NEW BUSINESS PREMISES, QUEEN STREET PLACE AND UPPER THAMES STREET, LONDON, E.C.

COLLCUTT AND HAMP, F. AND A.R.I.B.A., ARCHITECTS.

PROPOSED IMPROVEMEMENT OF THE CALTON HILL.

At a meeting of the Broughton Ward, Edinburgh, last week, Councillor McMichael mentioned a scheme for the improvement of the Calton Hill, which he indicated would be proposed by the Lord Provost to the Town Council at an early date. Notice of motion, it is understood, will be given by the Lord Provost, countersigned by Mr. McMichael, at the next meeting of Council, so that the matter may be duly considered in all its bearings. The Lord Provost, interviewed by a representative of the "Scotsman," wished that credit for the idea of improving the Calton Hill, so as to make it more of a beauty spot of the city, and a place of resort for citizens and strangers more than it is at present, should be given to Mr. McHattie, the Superintendent of Parks and Gardens. Mr. McHattie, he said, had brought the matter before him when he (Lord Provost) was City Treasurer, but the difficulty of launching any considerable scheme of the kind was largely financial. The hill, of course, had not been neglected by the Parks Committee, but the amount they were able to spend upon it annually out of the vote for parks and gardens was inadequate to effect any great change in its outward aspect. Some of them, however, felt, in connection with the discussion which had been going on as to how to make Edinburgh more attractive, that the time was ripe for an effort being made to turn the Calton Hill into a pleasure ground worthy of the city and of the splendid situation it occupies. As to the cost of such a scheme the Lord Provost thought that a sum of £10,000 would go a long way to cover it. A great deal, continued the Lord Provost, can be said for a proposal of this kind. We should, for example, make the entrance at Waterloo Place more ornamental, and the access to the hill more easy. The latter object could be done by a rearrangement of the steps. They had in view the making of a carriage drive right round the hill, the formation of new walks, the provision of a bandstand and tea-rooms, the planting of trees and shrubs, and the rearrangement of the seats so that visitors to the hill might command, at rightly selected spots, the extensive and splendid views of the city, the Firth of Forth, of Fife, and the Pentland Hills—views not to be rivalled from any other point of vantage in the city; and the planting and improvement of the slope facing Greenside. The new walks and carriage drive would also provide sites on which statues or ideal groups of sculpture might be placed; for apparently, as was seen in the case of the statue to the Marquis of Linlithgow, sites for such statues will be increasingly difficult to find in the city. With an improved Calton Hill, a place of general resort, this difficulty would, to a large extent at least, be overcome.

The Lord Provost mentioned that there had been submitted to them informally by Mr. Henry Kerr, architect, a sketch pla for the improvement of the hill, in whic these ideas had been embodied. One Mr. Kerr's proposals was that on th north-east slope of the hill there might b constructed an open-air theatre for th production of plays and pageants, an which could also be utilised for grea public open-air meetings and musical entertainments. There is a slope betwee the northern terrace of the hill and Rege Terrace gardens, which Mr. Kerr poin out might be made to seat between 4,0c and 5,000 people. It had been suggeste that the old City Observatory—now superfluous for the purpose for which it wa originally built, since the Royal Observatory crowns the heights of the Blackfor Hill—would with its sheltering walls mak an admirable refreshment room. Shou a scheme of this kind be approved of, would probably be desirable to enclose th hill, and have gates at Waterloo Plac Regent Road, and Greenside, so as to kee out undesirable characters overnigh Further, the Lord Provost indicated th he had been told that a movement wa still on foot to complete the Nationa Waterloo Monument. That, however, ha nothing to do with the civic scheme. was quite apart. He had heard that som wealthy colonial societies were to b approached by those who had this Nationa Monument project in hand to ask thei co-operation in raising funds to have completed.

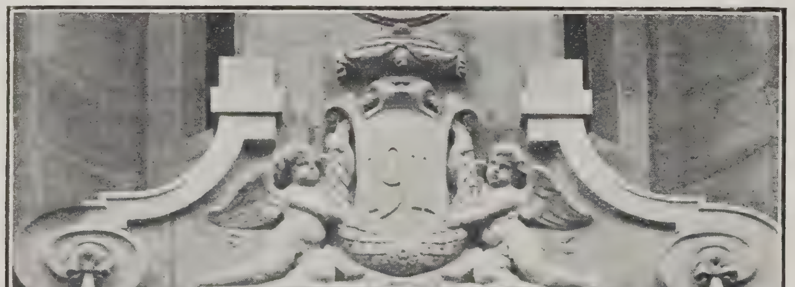


Photo: News Illustrations Co.

SCULPTURE ON NEW BUSINESS PREMISES, QUEEN STREET PLACE AND UPPER THAMES STREET, LONDON, E.C. COLLCUTT AND HAMP, F. AND A.R.I.B.A., ARCHITECTS.

IN PARLIAMENT.

(By our Press Gallery Representative.)

Board of Agriculture Buildings.

Mr Dudley Ward has informed Mr. C Bathurst that the new buildings of th Board of Agriculture will be ready fo occupation early in 1914.

Historic Monuments in Danger.

Sir H. Carlile asked the Governmen whether they had considered the recommendation in the First Report of the Historical Monuments Commission (Hertfordshire) in which the members calle attention to the fact that cases were occurring where it was desirable to deal at onc with imperilled monuments of histori importance, and in which they expresse the opinion that the time had come whe such cases should be dealt with by Government Department acting with th assistance of a permanent advisory board and in that case what action they propose to take.

Mr. Dudley Ward said the recommendation had not escaped the attention His Majesty's Government. They wer not, however, ina position at present t make any statement on the subject. Th First Commissioner, he added, was ver anxious to do all he could to preserve historical monuments, but of course the whol subject presented enormous difficulties.

The King Edward Memorial.

Asked when the design for the memoria to King Edward was expected to be submitted to the Government by th Memorial Committee in London, and whe the question of the site would be take into consideration, Mr. Dudley War stated that the memorial committee wa to meet on November 3rd. The First Commissioner had already promised t exhibit the plans in the House as soon a they were ready.

Roads in Regent's Park.

Mr. Cassel having complained of the ndition of the roads on the east side of gent's Park, Mr. McKinnon Wood said at after careful experiments the Crown tate Paving Commissioners had now cided to reconstruct the surface of the ads with a special kind of tar macadam.

ea Walls and the Development Fund.

Mr. King asked the Secretary to the easury whether contributions from the velopment Grant were available o engthen sea walls against high tides, d if so whether he would make a grant the Somersetshire Commissioners of wers within whose area at Kingston ymour there was danger of inundation, d who had inadequate resources to main- n and strengthen the existing sea bank. Mr. McKinnon Wood said he feared the engthening of sea walls against high les would not be a purpose for which grant could be made from the Development Fund, but he hesitated to express opinion on the subject without having full statement of the facts before him. e Treasury was unable to make an vance from the fund unless the Devel- ment Commission recommended it.

CORRESPONDENCE.

New Indian Patent Act.

o the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—May I through the columns of ur paper bring to the notice of such of ur readers as are interested in Indian tents, the fact that a new Act comes to force in India on January 1st, 1912, hich will alter the conditions under hich valid patents are obtainable? The rticular point to which I should like to aw attention is, that under the new ct valid letters patent cannot be obtained r an invention which has been pre- ously used or published (as by the inted British specification) in India. nder the present Act, however, it is lowable to file an application at any me within one year of the filing of the ritish application, or of the actual seal- g of the British letters patent. There- re, any intending applicants for Indian tents of which the corresponding British ecifications are now published, or will published by December 31st next, ould take care to have their applications ed before that date.

CHAS. B. KETLEY.

128, Colmore Road, Birmingham.

ederal City, New South Wales: Competition for Designs for the Federal City.

SIR,—With reference to the competi- on for designs for the Federal City, the Federal Government have re- sed to amend the conditions of this com- tition in the matter of the appointment assessors, and the final decision is n e hands of the Minister alone, in spite the recommendations made by the In- itutes throughout the Commonwealth as ell as the Royal Institute in London, my ouncil has decided to ask the members this Institute not to take part in the mpetition unless the conditions are ade more satisfactory.—I am, Yours ithfully,

ARTHUR WM. ANDERSON, Hon. Sec.,
Institute of Architects of New South
ales, 5, Elizabeth Street, Sydney,
eptember, 1911.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

The first general meeting of the session was held at the Society's Room, Leeds Institute, on November 2nd, the President, Mr. Sydney D. Kitson, M.A., F.S.A., F.R.I.B.A., in the chair. Messrs. Harold H. Woodhead and Walter Butler were elected Associates of the Society. The following changes in the officers of the Society were then announced:—Mr. Wm. Whitehead, A.R.I.B.A., elected hon. secretary; Mr. Peel Schofield, A.R.I.B.A., elected hon. librarian; Mr. J. W. Morley, F.R.I.B.A., elected member of council; Mr. Douglas Bowman, elected associate member of council.

An exhibition of the students' work during the year was then held, and the following awards were made:—The Society's silver medal and £5 5s. were awarded to Mr. F. L. Kruckenberg, for measured drawings of Hubberholme Church, Yorkshire. The prize for construction (£3 3s.) was awarded Mr. W. Voelkel, for a design for an entrance hall and staircase to a public building. The winning design was a well-worked-out scheme in reinforced concrete.

The following gentlemen tied in the design competition, four subjects having been competed for during the session: Messrs. E. H. Gibson, L. A. Elsworth and P. C. Robinson. A prize of £3 3s. was awarded to each.

The Halden prize of £4 4s. was divided between Messrs L. A Elsworth and Walter Butler, whose work was considered of equal merit.

The Sketching Club prize of £2 2s. for sketches was awarded to Mr. F. L. Kruchenberg, and £2 2s. for detailed studies to Mr. C. B. Chadwick.

The next meeting will be the annual smoking concert held at the Queen's Hotel on November 16th.—DOUGLAS BOWMAN, Hon. Reporter.

OBITUARY.

Mr. Benjamin Harlow.

Mr. Benjamin Harlow, who died last week at Upton, Macclesfield, at the age of 82, was a member of the firm of B. Harlow and Son, heating engineers and ironfounders, King Edward Street, Macclesfield, which was established in 1836 by his father, Mr. J. Harlow. Owing largely to Mr. B. Harlow's inventive genius the firm eventually acquired a very wide reputation with their steam-heating process. He was one of the pioneers in the North of England of the low-pressure system of hot water heating, in connection with which he held numerous patents. He was also the inventor of a special fire alarm for use in collieries. He retired many years ago, the business being now in the hands of his son, Mr. Charles Harlow.

Mr. John Brown.

Mr. John Brown, F.R.S., of Longhurst, Dunmurry, died in Belfast last week. Mr. Brown was an associate member of the Institution of Electrical Engineers, and a Fellow of the Physical Society, London. He gave valuable aid to the work of the Roads Improvement Association, and he invented the viagraph, an instrument which recorded the inequalities in road surfaces. Mr. Brown was local secretary during the visit of the British Association to Belfast in 1902. He was the author of many scientific works.

Mr. Roland Duggan Rawcliffe.

Mr. Roland Duggan Rawcliffe, architect, who has died at the early age of 38, at 64, Woodstock Road, Bedford Park, was an artistic draughtsman of exceptional skill, his drawings having been much admired in the art exhibitions of London, and members of the architectural profession recognised and appreciated, not only his skill and accuracy, but especially his artistic feeling in the treatment and perfection of a design. Mr. Rawcliffe leaves a widow and two daughters.

OUR PLATE.

A perspective drawing of the new interdenominational church at Hampstead Garden Suburb is the subject of this week's Centre Plate. Some structural particulars of the building, of which Mr. E. L. Lutyens is the architect, will be found on p. 496, on which page, and on p. 497, further illustrations are given.

LEGAL.

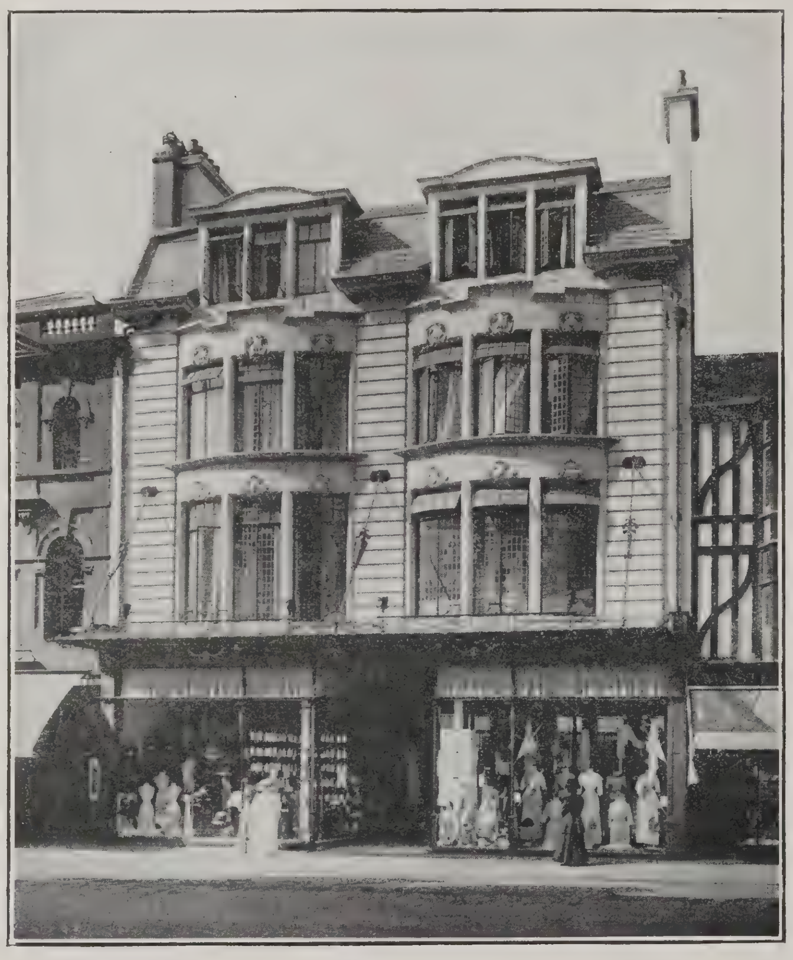
Water Supply to Workhouses.

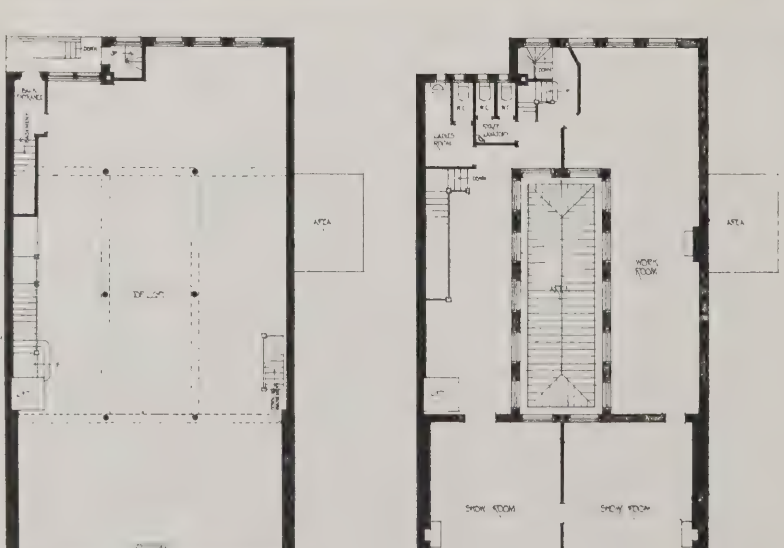
In the High Court of Justice (Chancery Division) on October 30, Mr. Justice Eve tried the action of the Bristol Guardians v. Bristol Waterworks Co., in which the plaintiffs sought a declaration that they were entitled to be furnished by the defendants with a supply of water for domestic purposes at the rents prescribed by the Bristol Waterworks Act, 1862. It appeared that the defendants had for many years furnished the plaintiffs with a supply of water for the use of the officers and inmates of the plaintiffs' premises, and had charged for the same by measure at the rate of 1s. per 1,000 gallons. In September, 1910, the plaintiffs requested to be supplied with such water at the rents contained in section 68, but the defendants refused to supply except by measure.

Mr. Justice Eve, in his judgment, said that the plaintiffs had for many years used the premises in question as workhouses. Two of these contained a large number of inmates, and the plaintiffs, with a view of reducing the cost of the water, applied to the defendants to supply the water at a rent calculated on the value of the premises. Such a claim if allowed would materially diminish the cost of the water supply. The defendants, however, declined to supply the water except by measure, and this action was accordingly brought for a declaration that the plaintiffs were entitled to a supply of water at the prescribed rents. The controversy turned on the words "furnish to every occupier of a private dwelling-house." The conclusion at which he had arrived was that it is impossible to hold that an institution of this nature is a private dwelling-house. It seemed to him that in considering the section of the Act you cannot say that the word private does not differentiate dwelling-houses. If that were not so the section would extend not only to private dwelling-houses, but to business premises and public institutions. It is said that you can eliminate the word "private" altogether since it adds nothing to the word dwelling-house; but he knew of no authority which would justify him in putting such a construction on the section. It is true that in a Scotch case it was held that the word "private" had no effect, but with great respect for the learned judges who decided it he did not think he should be justified in following that decision. In his opinion the plaintiffs were not entitled to the declaration they asked for, and he dismissed the action with costs.

NEW BUSINESS PREMISES, HARROGATE.

The new premises for Messrs Marshall and Snelgrove, Ltd., in James Street, Harrogate, illustrated on this page, provide, on the ground floor, a shop 83ft. by 40ft. abundantly lighted through a large oblong lantern, and on the first floor two large showrooms, a workroom, and accommodation in connection therewith; while on the two floors above are rooms for general office work, kitchen department, dining-room, sitting-rooms, housekeeper's quarters, etc. In the basement is a strong-room for furs, there being also a store-room for each department. An electrically operated vacuum-cleaning plant has been installed, and the heating and other appliances are all up-to-date. The front of the building is carried out in white "Marmo." The architect was Mr. T. E. Marshall, F.R.I.B.A., of Harrogate, and the general contractor was Mr. William Gott, of Leeds





PLAN of GROUND FLOOR

PLAN of FIRST FLOOR

BUSINESS PREMISES, JAMES STREET, HARROGATE.

T. E. MARSHALL, F.R.I.B.A., ARCHITECT.

AN ASPHALTED SHEET-LEAD DAMP-COURSE.

A damp-course—or, as some prefer t call it, a damp-proof course—that not onl serves its purpose with the utmost effi ciency, but occupies a minimum depth o space, and is easy to lay whether in process of building or when inserted afterwards is a veritable boon to the architect an builder. Mr. Alexr. G. Lee, 14, Joh Street, Bedford Row, London, W.C., ha produced a damp-course for which thes advantages are confidently claimed. I consists of two thin layers of fibrou asphalte sheeting, between which is interposed a continuous sheet of lead foil. Mr Lee, in an illustrated booklet on the subject, adduces convincing proof that, as h has long maintained, lead is the mos effective and reliable material that coul be adopted for this service; and th original English patent in which his ide is embodied was granted as long ago a 1892, since when his system has bee rapidly increasing in favour. The "All time" damp-course has been used, to cit a few instances, by H.M. War Office, a the barracks at Whittingdon, near Lic field; at Shorncliffe; at the R.M. Depo at Deal; and at the old barracks, Fermoy by the Admiralty at the royal dockyard at Portsmouth, and Malta, the new magazines at Bedenham, in the extension t Lodge Hill Laboratory at Chattenden, an at the Naval Cadet Training College a Osborne, in the Isle of Wight; by th Home Office at the prisons at Birmingha and Norwich; by the Great Western an Great Northern Railways; by Hert County Council at the Domestic Econom Centre at Watford, and at new school at Knebworth and Boreham Wood; b Liverpool Corporation in the new school in Rice Lane; by Lancashire Corporatio in the isolation hospital at Earlestown and in various school and university buildings in Scotland and Ireland. The rea son for protecting the lead between layer of asphalte is obvious—provided the lea is protected from corrosive or chemica action, such as might arise from contac with damp lime mortar, it is simply im perishable, as is shown by the wonderfull sound condition of the lead anchor ca by the Greeks in the first century of th Christian era, and preserved in the Britis Museum.

The "All-time" damp-course cann squeeze out or run with heat, and is there fore independent of climatic influence Stocked in all wall-widths, in rolls 66f long without a joint, it can be easily rolle along the footings by any labourer, an can be inserted in a brick course of o work with the absolute minimum of diff culty. It is also obviously serviceabl for use on roof gardens, and for the linin of ornamental ponds, tanks, filter-bed reservoirs, swimming baths, and simila uses.

The Ancient Monuments Protection Act

In view of the sale of Tattershall Castl his Majesty's Office of Works have issued letter to county councils calling attentio to the provisions of the Ancient Mon ments Protection Acts, 1882 and 190 providing for the guardianship of mon ments of historic, traditional, or artist interest. The letter states that the matte is of national importance, and the expens involved in guardianship would in som cases be more fittingly borne nationall than locally. The First Commissioner Works hopes that county councils will n hesitate to draw his attention to any mon ment worthy of protection.

THE CHÂTEAUX OF THE LOIRE.*

BY H. H. HILL, M.A.

After detailing the various points of ew from which the arts may be studied ad enjoyed, Mr. Hill said that personally e thought it a good thing to consider d work, for a while, at least, as design aly; to study how certain means have rought about certain effects, and the sthetic value of these effects, detaching together, for the moment, the various istorical circumstances that also have had eir share in determining the form of the rchitecture. We, as modern designers of uildings, are not so much interested in ır ancestors as we are in their archicture.

His endeavour in this paper, therefore, as to describe the architectural impresons that he received during the A.A. xcursion to the Loire last August.

The chief aim of the excursion this year as to visit the Early Renaissance hâteaux, the work of the School of Tours, hich are so plentifully scattered about the oire country, from Orleans downwards. ut there was also a considerable amount f interesting church work—at Fontevault, Loches, Blois, Candes, Langeais, ours, etc.—to be seen, and this the author riefly described.

The Architectural Unity of the Chateaux.

The châteaux showed, as a class, more rchitectural unity than in the churches. ne could see also in them the continuous evelopment of the habits and conditions f life through several centuries, and along ith it the evolution of the architectural ense. In the beginning the fortress hâteau, built for defence, often rose to ıe dignity of architecture, because if not proportioned unto the rules," it was, at ll events, "solid, masculine, and unffected." At a later period, when defence eased to be the first consideration, and rchitectural magnificence was eagerly ought, the elusive fairy sometimes all but scaped, leaving in her room but a heap f carvers' pranks. Here certainly archiecture was "unaffected," and in good ork there was evidence of an endeavour understand the "rules," though it did ot always look solid, and often was anyhing but "masculine." Finally, with he rise of the modern architect, trained n both construction and æsthetics, the four equisites of Inigo Jones could be well ulfilled, as we saw them in François Iansart's fine wing at Blois.

Loches.

In the original mediæval castle at oches, now a ruin, though in its day ne of the most important fortresses in rance, at all events there was affectaion. Nothing could be plainer than the valls of the donjon, relieved only by emicircular buttresses. Nothing more han solid building was aimed at, and ıothing more attained. What is now nown as the château was built at the ther end of the site by the Kings Charles VIII. and Louis XII., that is to say, etween the years 1422 and 1515. The erticality of its fenestration is telling; hough from the level of the terrace the ınusually heavy string-course becomes lmost the most important line in the composition. There was nothing of exceptional interest in the interior.

Amboise.

Rising out of the town in the same way as the château of Loches, but with the added advantage of being on the bank of the Loire, is the royal château of Amboise. Here what one sees to-day is but a part of what formerly existed, for Napoleon I., in an evil hour, granted it to one Roger Ducos, who, in order to save himself the trouble and expense of repairs, destroyed a portion of the buildings. The tower is interesting. Inside it is a sloping way, up which horses and light vehicles can be brought. It is top-lighted, and the piers around the light well in the centre assist in carrying the inclined vault. The chapel stands isolated from the other buildings, and is an excellent example of what was good in late Gothic. The remains of Leonardo da Vinci lie buried here

Chaumont.

At Chaumont the château is again situated standing high up over the Loire. At close quarters it becomes much more like the work of the military engineer than of the architect. The entrance to the courtyard is between the towers at the southeast angle, and whether deliberately designed for its effect or not, it is a fine piece of architecture. Originally the building entirely surrounded the courtyard; but in the XVIIIth. century the north side was taken down, in order, perhaps, to open up the fine view across the river; but the general design naturally suffers from being thus dissevered.

Langeais.

Langeais is another mediæval castle, grim looking enough from the outside, though restored and inhabited at the present day. The original donjon was built in the tenth century; but practically the whole of the building now to be seen dates from the fifteenth. About the year 1840 it was restored, and again about thirty years ago. The work has been most carefully done, and the late owner has gathered together within its walls a most interesting collection of furniture, tapestries, and other domestic accoutrements, mostly work of the fifteenth century

Luynes.

Not far from here, and also at the north side of the river, is the little town of Luynes, the chief glory of whose château is its picturesqueness and its magnificent situation. The buildings are partly fifteenth century and partly early seventeenth, the latter marking the transition from the exuberance of the Renaissance to the Classic school of Louis XIVth's reign. The smallness of scale still remains, but a much greater quietness and sobriety of treatment has arrived.

Brickwork Scarce.

Brickwork is not common in this part of the Loire country, and the only example that we saw of a brick château was Du Moulin. Built in the latter half of the fifteenth century, this château remained certainly until the middle of the nineteenth in the possession of the descendants of the original builder. Victor Petit in 1861 describes it as being carefully furnished in the style of the time of its building. But the house was restored about six or seven years ago.

Blois.

At the château of Blois we reach the Renaissance. The building, indeed, really contains work to suit all tastes—late Gothic, Renaissance, and Early French Classic. Philibert de l'Orme was not born a day too soon. At the time of the Renaissance French masons were past masters of their craft. At Blois, indeed, there was no difficulty that they could not surmount, and the staircase is undoubtedly a very marvel of dexterity and beauty. But beautiful features to dot necessarily make beautiful architecture. And what was lacking in the early days of François I.'s reign was the mind of the architect to conceive and to control. The Renaissance meant the rebirth of architecture as intellectual design, and although the old combinations of craftsmen tried hard to master its forms, they only attained to picturesqueness of detail, and never reached with them the nobility that they had attained with their own Gothic. To put what the author thought of this part of the château into present-day office slang he would say that it had been very cleverly "half-inched," but on a series of small pieces of paper, and that the eighth-scale elevations had never received any consideration. As a result the building is altogether without rhythm. The vertical divisions of the side facing outwards are really exasperating. And it seems such a pity that this great accumulation of fine details (for the over-loaded cornice on the courtyard side is the only one that is objectionable) were not combined and unified by some synthetic mind. The earlier entrance front is a happier piece of work. Here there is no pretence at regular fenestration. Stone shafts make vertical divisions, and windows occur any where in the panels between. The effect is quiet, and the only blot on the design as a whole is the doorway, a feature pushed in anyhow, instead of one developed out of the general scheme, and one again showing the need for the modern architect that was growing even when the Renaissance had hardly begun. The only part now remaining unrestored is the interior of the latest building, designed by François Mansart for Gaston d'Orléans about the year 1637, a building that was accounted a sin by all true romanticists of the nineteenth century. Most people nowadays, however, will think less hardly of it.

Villandry.

At Villandry the château, standing on the site of the mediæval predecessor, of which only one tower remains, was built in the second half of the sixteenth century, altered in the eighteenth, and again, for the worse, in the nineteenth, and is now in the throes of more alterations, but this time undertaken in a spirit of architectural zeal, with much taste and judgment, though some of us may think with out quite sufficient leaven of discretion.

The Gem of the Excursion.

From Villandry they drove to Azay-le-Rideau, to the château that, in the author's opinion, was the gem of the excursion. The river front is altogether delightful There is a kind of music in it, obtained one knows not how, except by a happy combination of excellent qualities. Good proportions there are, fine scale, and symmetry, though this last is by no means the mathematical sort, for there are many little irregularities which the eye does not at first detect. But the quality which above all others distinguishes it and makes it so much finer than the work of the same period at Blois, for instance, is its marvellous rhythm. With the bright sun upon it the whole elevation dazzles one in its shimmering whiteness. It seems hardly real. At the other side, too, the approach is equally charming. A long, straight avenue on the axis of the entrance doors leads one first past a pair of excellent gate piers of seventeenth or eighteenth century design, upon either side of which, facing the château, are picturesque stable buildings, erected about the same period. These piers serve a very useful purpose. They block out the view of nearly the whole of the château, allowing one to see only a vista of the entrance feature, for feature it is, and a good one by itself. But probably it must have been a thorn in the side of the architect of the building. The history of it must have been something like this:—Gilles Berthelot, the owner of the house, and some time Treasurer-General to King Francis I., probably wanted to be in the latest fashion. He wanted to have in the middle of his house a fine feature, containing the entrance and staircase, all done in the new Italian style. Accordingly he did just what many another foolish client would do to-day. He dispensed with his architect's services for this portion of the building, and introduced the sculptor from Italy over his head. The sculptor really did well, on the whole, though there is a good deal of petty nonsense in his detail. But where he failed was where a great many other people used to fail at the same period—he did not realise that what he had designed was in no way a part of the building to which it belonged. It is just as if one design were inserted in a part cut haphazard out of another.

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*Extracts from a paper on the A.A. Excursion to he Loire, 1911, read before the Architectural Asso- iation on October 30.

Chenonceaux.

The château of Chenonceaux contains the latest development of architecture that the excursionists saw, with the exception of Mansart's wing at Blois. But whereas at Blois the characteristic part—the part that one always, though, may be, involuntarily, associates with the name—is the wing containing the staircase, at Chenonceaux the bridge gallery is the picture that flashes to one's mind with the word. This, together with the stables here also, is the work of Philibert de l'Orme. De l'Orme, having studied his art in Rome, was practically the first French architect to understand what classic architecture really meant. Not only did he see that it was more than an affair of decorative details, such as had marked the Renaissance up to this, but that a building should be a single work of art, the intellectual output of a single individual. The system of producing architecture by collective craftsmanship died with the old Gothic. De l'Orme hated the old order of things; and he probably saw enough of the bad work resulting from a combination of French masons of the old school with Italian carvers and painters of the new, each out of sympathy with, and failing even to understand, the aims of the others.

In the bridge of Chenonceaux the feeling is different from any of the contemporary work in the neighbourhood. The building is not better than some of the others that were seen. It contains certain results of detail, such as the missing out of some of the modillions in the cornice, in order to bring in the tops of the pediments, and the placing of semicircular headed windows in the rounded bays over the piers of the bridge—this being rather typical of De l'Orme's weakness for constructional feats, for there was a certain difficulty in doing what the surveyor would call "circular-circular" work. But this bridge is a design. It is felt that the quality of breadth which it possesses was sought for deliberately and scientifically. Every effect was first considered on the drawing-board.

The remainder of the château, also partly built over the river, makes a good foil to De l'Orme's more serious work. On both sides it groups up in a very picturesque manner, but the stunted proportions of the first floor rather spoil the effect of the entrance front.

The paper concluded with short descriptions of some of the towns visited.

DISCUSSION.

Mr. Gerald Horsley said that Mr. Hill was too modest when he disclaimed special knowledge of French architecture. His paper, indeed, revealed a deep insight into those motives which impelled it forward. The Association, he thought, had been fortunate in the *locale* of this year's excursion; the district was rich alike in architecture and in natural charm. They did not see the River Loire in her highest power of magnificence, but they saw her in summer dress beneath the purest and bluest of skies. In Tours cathedral, continued Mr. Horsley, there was a large amount of fine stained glass; and the bays of the nave and of the choir were excellent examples of that type of design in which the clerestory window filled the entire width. Tours was also famous for its town-planning. Many of the châteaux were notable not only for splendid furniture, but for a wealth of fine tapestries. Several fine tiled floors were seen, and many excellent chimneypieces, of which perhaps that at Langeais was the best encountered on the tour.

Mr. Johnson, proposing a vote of thanks, drew attention to the charming character of much of the detail. The arabesques on pilasters, for instance, possessed a delightful Italian feeling. After being accustomed to our own Georgian work, it was very interesting to see how the French architects treated residences in those times.

Mr. H. D. Searles-Wood, seconding the vote of thanks, recalled that Professor Blomfield, in a paper read before the Institute last year, noted that François Premier was to a large extent his own architect, and dispensed, as far as possible, with the services of professional architects. Possibly many of the architectural irregularities of the period were due to this fact At Tours, continued the speaker, there was a very interesting university vacation course, which was open to English visitors. French could be studied in the morning, and architecture in the afternoon. He had with him a copy of the prospectus, which he would gladly deposit in the Association library.

Mr. Louis Ambler said he had spent a month among the châteaux some twenty-five years ago, and, judging from his own experience, it was remarkable that the excursion party had seen so much. Chambord, he remembered, impressed him as being very huge and vast, and also a little disappointing; for what at a distance appeared to be inlay work, proved only to be slates laid on. At the time of his visit the wing by Mansart was not generally appreciated, but since then views had changed.

Mr. Andrew Oliver pointed out that the examples they had seen clearly exemplified the transition from the fortress to the château. Loches was a fortress pure and simple with its machicolations serving a practical purpose. At Langeais they still found the machicolations, which, however, had now become merely a cornice.

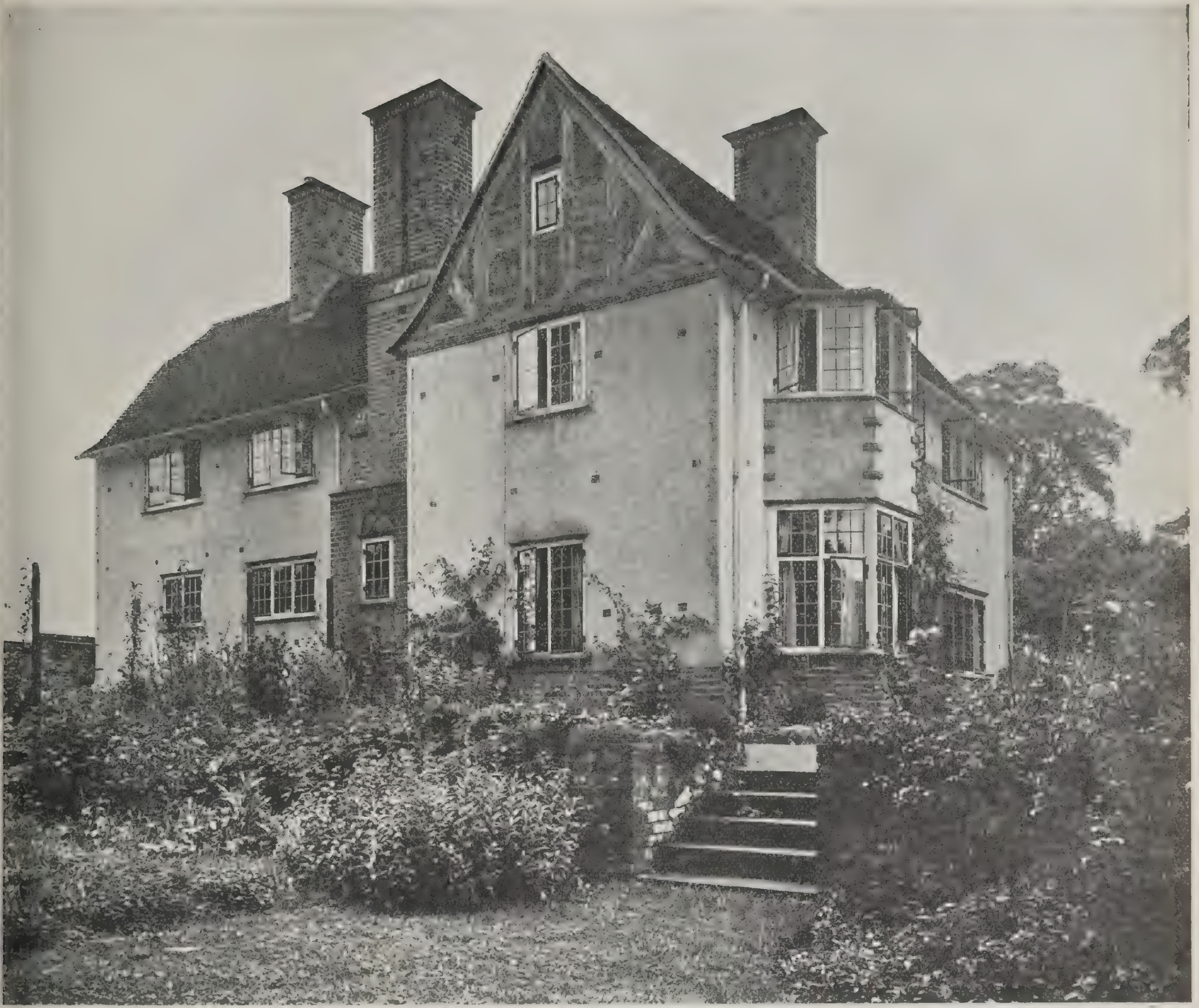
Mr. Arthur T. Bolton referred to the lack of facilities for sketching and measuring the châteaux in consequence of their being inhabited. During the great epoc between 1520 and 1600, there was a larg body of Italians at work in this particula part of France. Du Cerceau, in 157 published his book containing drawing of châteaux, the originals of which wer now in the British Museum. These undoubtedly represented the buildings a originally erected. After his visit Italy, in 1548, Du Cerceau settled down i Orleans and established his school of engravers. It is not known that he designe any buildings, but he produced a larg number of prints, such as those collecte by Wren during his Continental trave These prints had the effect of spreadin about the prevailing style of architecture. Palladio, for instance, heard o the double staircase at Chambord; this h drew in the Italian style, putting it forward as what was actually to be seen i the King's Palace at Chambord. Franci I., continued Mr. Bolton, was alway building; no sooner was one châtea finished than he started another. He wa notoriously negligent in the matter of repairs, and upon being told of the excellent condition of a certain château n replied, "It cannot be one of mine!" Th period was notable for many picturesqu personalities. Cellini, for instance, wh took a leading part in the sack of Rome came to France and was presented b the King with a château. Another gentleman happened to be in occupation at th time, and Cellini rather resented his bein there. He complained to the King, who probably thinking of Cellini's militar reputation, enquired, "Are you the Cellin we have heard about?" This was enoug for Cellini, who promptly returned an evicted the unwelcome guest. His grea rival at the French court was Primaticcio The latter was once commissioned to execute a certain piece of work; but Cellin disapproved, and threatened to kill him i he did not resign the commission.

Mr. Edwin Gunn referred to Mr. Hill' suggestion that detail drawings were prepared for the François Premier front a Blois. Probably this was correct; it certainly was so according to Mr. Ward. Th remaining part of the château of Amboise concluded Mr. Gunn, was only a fragment of the original building.

Mr. H. D. Searles-Wood interpolate the remark that an extremely interestin historical account of the period was give in Mr. Noel Williams's "History of Hen II. and François Premier."

Mr. G. H. Jenkins, having spoken eulogistically of the excursion, which was th first he had attended, commented upon th very slight influence that the Italians appeared to have exercised upon the genera design of the buildings. He had als noticed how at Chambord the building appeared to have been started in a plain simple way, and afterwards had blossome out into the wildest extravagance of ornament. as though the intention of the desig had been completely changed.

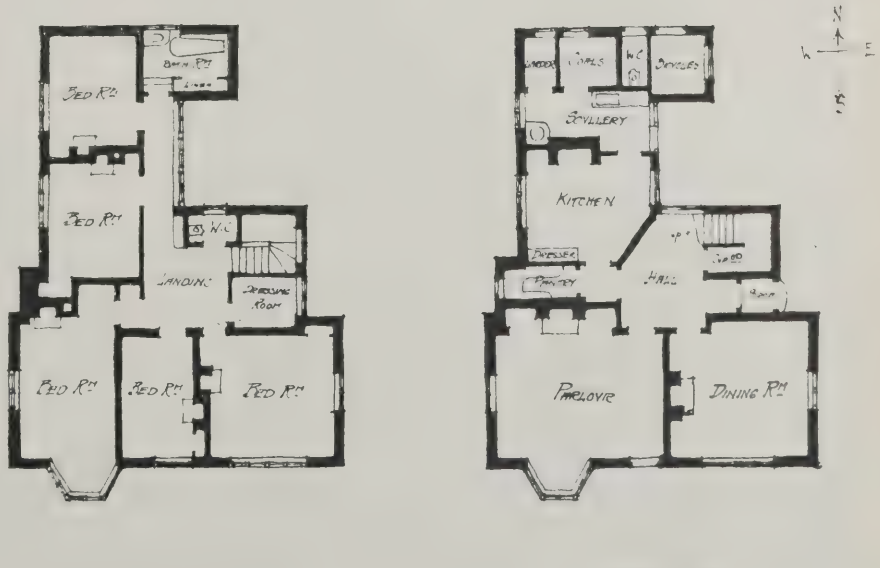
The vote of thanks having been carried Mr. Hill, in reply, said that much of th furniture and china of these châteaux wa removed at the time of the Revolution t cottages and farm houses in the neighbourhood. With regard to Blois, he di not think it grew quite in the way originally intended. The enthusiasm sometime outran the scholarship of the architects. He did not know the extent to Amboise before it was destroyed. The French Philistine destroyed ruthlessly; and a great many châteaux were demolished in the eighteenth century simply because people did not want to be put to the trouble of keeping them up.



THE DIAL HOUSE, CHIPSTEAD.

This is a small house designed to meet certain requirements of accommodation and position. It is built of brick. The plinth of stock brick is left showing, and above it is coated with rough plaster. The roof is covered with tiles. The windows are iron casements with lead glazing. It was designed by Mr. O. P. Milne, architect, of London, who also laid out the garden. The builders were Messrs Shrouder and Matthews, of Stevenage, Herts.

The general lines and proportions of this house recall the old cottages for which Surrey and Sussex are so famous On the site there was formerly an old barn, in which were some fine oak timbers. Excellent use was made of these as half-timber work, which is in pleasing contrast with the rough plaster covering of the main walls. The bricks forming the plinth, etc., are local, of a purplish colour, and with a good texture, toning well with the cream colour of the plaster and the grey of the old timbers. The roof is covered with red tiles. The windows are iron casements filled with lead glazing. Within the house the treatment is everywhere in keeping with the exterior—quite simple, with good craftsmanship much in evidence. The woodwork generally is



First Floor Plan.

Ground Plan

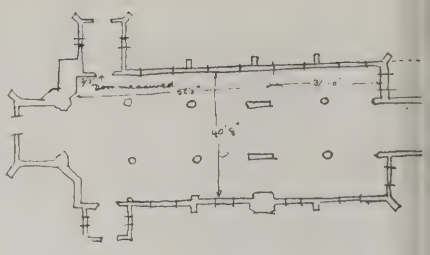
"THE DIAL HOUSE,' CHIPSTEAD, SURREY. O. P. MILNE, ARCHITECT.

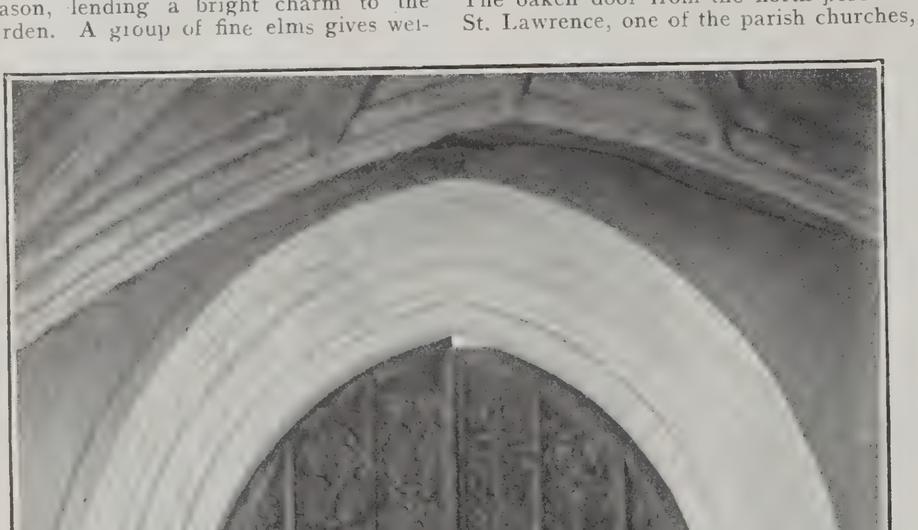
of unstained elm, the floors of the ground-floor rooms being laid with jarrah. The doors are ledged with broad pieces of elm tongued into smaller moulded strips. Distinction is given by all the fittings to doors and windows being specially made of wrought iron. The garden has been laid out in keeping with the house, the natural features of the site having been taken into account and emphasised to give additional interest. By so doing, the garden, though small, has a charm and interest that could not be obtained by any haphazard arrangement. A broad terrace surrounds the house on two sides. From this a wide flight of steps leads down to a straight path flanked by herbaceous borders. The drawing-room bay faces down this path. Another flight of steps leads down to the lawn. The terrace walls are built dry of flint and brick, and make a good setting for wall plants and creepers. Two small ponds at the end of the herbaceous walk have been connected by a dry ditch, and these form scope for a water garden; the ditch, filled with iris and other plants in their season, lending a bright charm to the garden. A group of fine elms gives welcome shade to the lawn, and distant views up the Chipstead valley are obtained in the gaps beneath the spreading branches. The architect of the house and garden was Mr. O. P. Milne, of London, and the builders were Messrs. Shrouder and Matthews.

DETAILS, OLD & NEW.—XXXI.

Doors from the North Porch of St. Lawrence, Norwich.

Norwich has been aptly called "the City of Churches," for it contains within its circuit more than forty. It has, besides, a notable cathedral, whose beautiful spire, as it is seen rising like a pillar of cloud above the trees of the Close, is a thing to marvel at. The church of St. John's, too, a modern building designed by Sir Gilbert Scott (1881—1911) is also notable. It is typical of the city, for there is no distinct line of cleavage between the old and the new; they stand together cheek by jowl, so that he who runs may read of the progress and development of the city. The oaken door from the north porch of St. Lawrence, one of the parish churches, is an excellent example of Perpendicu style. Difficulties in technique were known, and the builder was at liberty give rein to his phantasy. No other planation suffices as *raison d'être* the roofs of Henry VII.'s chapel, George's at Windsor, and the equally n able one at Cambridge. A splendid r was added to Norwich cathedral about middle of the fifteenth century, and it amusing to consider that one of designers may in an odd moment h given the idea for the door of St. L rence's porch. At the least it belongs the same period.





DOORWAY, CHURCH OF ST. LAWRENCE, NORWICH

The Church of St. Lawrence is a g specimen of Perpendicular architectu It has a nave and chancel, two aisles a tower at the west end, and two porch From the one on the north our illustrat is drawn. A similar door is in the so porch. There are delightful freedom variety in the carving of the tracery cusping of the door. The geometry o is sadly out, not that it loses there To many it may seem a great gain the play and delight in the workmans should be so untrammelled, should be visibly expressed. Even the vertical are not spaced evenly. The distribu of ornaments is usual. In the upper the rich tracery blossoms out like a flo and at the foot, like roots to support is a simpler and more severe adornm The door is constructed in the usual v of stout oak planks, over the joint which, in the outside, are placed the r lions and tracery. It is hung on he iron strap hinges direct to the stonew

J. M. W.

No. 34, Great Tower Street, E.C.

No. 34, Great Tower Street, is on the few remaining houses in the built soon ofter the Great Fire of It stands in a courtyard entered from street through an archway.

A flight of steps with landing paved stone and black marble squares, and closed with a wrought-iron balustr leads up to the ground floor entrance.

The ground floor windows and entr doorway have pilasters with necking sunk and raised panels, finished wi wooden cornice. The windows panelled framing underneath, and al woodwork is in oak.

The upper part of the premises i thin red bricks, with projecting ba which latter serve as a sill for fourth windows, the front being finished wi wooden cornice supported by ca modillions.

H. F.

PUBLIC LIBRARY, STAFFORD.—The poration invite designs for a p library. Conditions of competition other particulars may be obtained Mr. William Plant, A.M.Inst.C.E., Bor Engineer, Borough Hall, Stafford payment of a deposit of £1, which wi returned on receipt of a bona-fide d or the return of the conditions, etc., w one month of receipt. A profess assessor has been appointed.

ROJECTED TOWN-PLANNING SCHEMES.

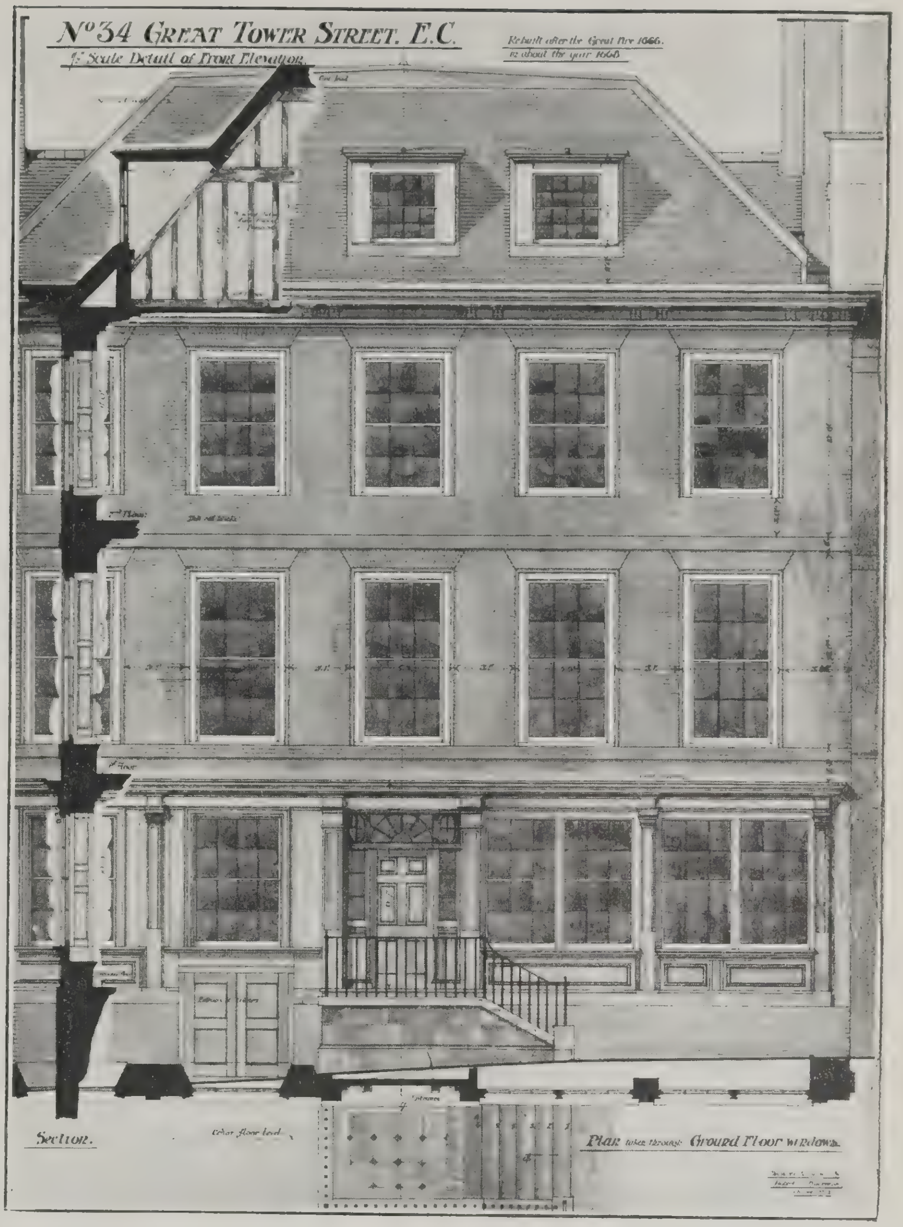
“White Paper” is now being pre- ed for presentation to Parliament, ler Mr. Burns's instructions, showing extent to which municipal authorities e taken advantage of the Town Plan- g Act or are considering the advis- lity of doing so. Meanwhile, informa- gathered by “The Times” from many ts of the country shows that in seven es the local authorities have asked and ained the Board's leave to formulate emes, and an eighth, that of Bourne- uth, will probably be added to the list nce. About a dozen other authorities e given notice to the parties interested t a scheme is intended, and a dozen e have decided that notice shall be en, while about 50 are officially dis- sing the matter. The “Times” writer gathered particulars of the following emes:—

Vith respect to the outskirts of Lon- , at Ruislip, the local authority has ained the Local Government Board's e to submit a scheme for the planning ,906 acres. At Hayes action is likely e taken in the near future. Greenford asked Harrow to co-operate in a eme, and Harrow is about to discuss a eme of its own. Wembley has decided ake immediate steps. In Willesden council and owners are negotiating emes for all the vacant land left. In chley a scheme is being prepared for strict served by both the Great North d and the Regent's Park Road. In don preliminary plans have been got The Wood Green council has taken he question, and it is thought a scheme be prepared for 500 acres. Waltham- has a committee about to report. well has just applied for leave to pre- on extensive scheme. In Heston and worth a scheme is being prepared, and probably include a large part of the e of Northumberland's and Lord Jer- estates. At Twickenham a scheme for acres has been approved by owners, conferences have been held to re co-operation with Richmond. The ervation of the view from Richmond is one of the objects. The Ham council decided to start a scheme of its own if ckenham's scheme includes a bridge the Thames near Eel-pie Island, such idge being strongly objected to. The er and Dittons council has a commit- at work, and important results are ex- ed. The Maldens and Coombe coun- as scheduled the whole of its unbuilt- area. In Surbiton similar action is shadowed. Carshalton thinks of ning 2,500 acres, and successful con- ces have been held with Croydon, on, and Epsom, a good main road be- n Croydon and Epsom being badly ed. In Croydon rural district a me has been formed for 1,474 acres orden and 300 in Mitcham; and Mer- s working out a scheme which would de a large part of Morden if amalga- on of the two were allowed.

the Midlands, Birmingham has ob- d leave to prepare two schemes, for acres in the south-west, chiefly in ton and Harborne, and 1,442 acres in east. Oldbury, North Bromsgrove, Chesterfield have also schemes on .

the North and North-West, Sheffield eduling 4,209 acres, and hopes to be- with about 1,220 in the west, south- and north. In Huddersfield a ne has been practically adopted by a council committee. In Halifax Mr. Whitley, M.P., is giving prizes for the best town planning schemes by local architects. In Hull the City Engineer's plan covers 670 acres of the north-east district. In Liverpool it is proposed to schedule 88 acres in the south-east, near the new garden suburb. In Manchester the committee has proposed a scheme for the northern and southern suburbs. Rochdale has received authority to prepare a scheme for 43 acres, and a much larger area is contemplated. Middleton's application has been rejected as out of form, but an amended proposal will no doubt be granted; the scheme covers 300 acres. Nelson has given notice of a scheme covering 83 acres. The Barrow-in-Furness Corporation has adopted three schemes, the acreage being 1,780. Stockport has a large scheme, providing for 2,300 acres in the south and 2,700 acres outside the borough. Part of the area is in Lancashire. Ellesmere Port, the new town on the Mersey, has given notice of a plan including Hooton Park and large sections of the Wirral and Chester rural districts. The Wrexham Rural District Council has decided to adopt the Act, and will probably begin with Gresford, where a large colliery is being opened.

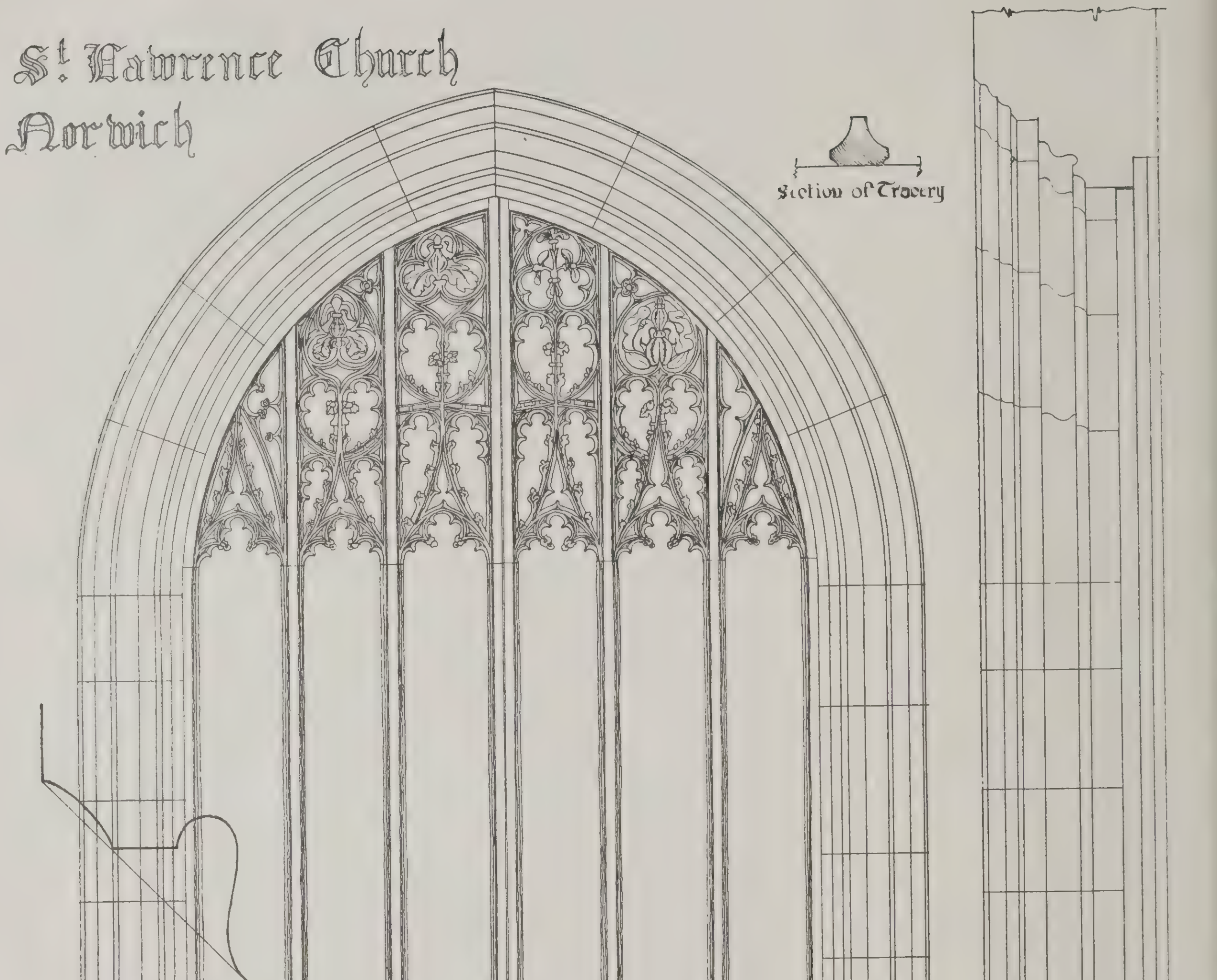
In the southern counties, Bournemouth has scheduled 202 acres, and leave to submit a scheme will probably be given this week. In Portsmouth all the land still vacant has been provisionally scheduled. In Kent, Rochester's application has been rejected. A great part of the area mentioned—and the whole area was small—consisted of Crown lands, to which the Act does not apply.


No 34 Great Tower Street. E.C.
½" Scale Detail of Front Elevation.
Rebuilt after the Great Fire 1666. or about the year 1668
Section.
Cellar floor level
Plan taken through Ground Floor windows.

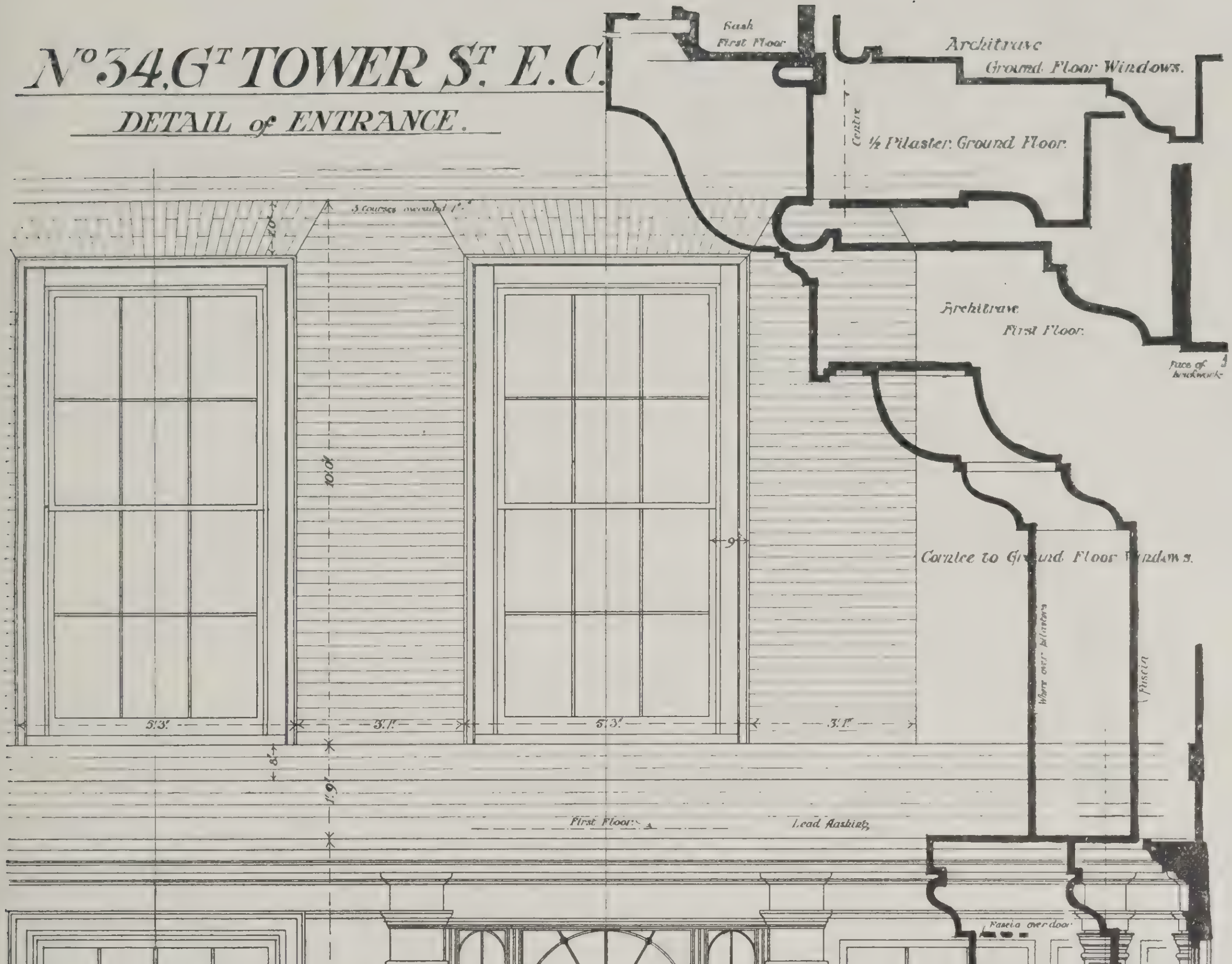
MEASURED AND DRAWN BY HUBERT F. BATEMAN.

Gladstone Memorial for Edinburgh.

Shortly after Mr. Gladstone's death, an influential committee was formed in Edinburgh, comprising representative men of all political creeds and classes, to have a suitable memorial of the great statesman erected in the Heart of Midlothian. A design by Mr. Pittendrigh Macgillivray R.S.A., was selected, showing a magnificent figure of Mr. Gladstone, with four emblematic groups at the corners of the base. The Lord Provost (Sir W. Brown) has received a definite assurance that the monument will be erected before he retires from office a year hence. The Town Council have given a site in St. Andrew Square, off Prince's Street.



MEASURED AND DRAWN BY THEO G. SCOTT.



MEASURED AND DRAWN BY HUBERT F BATEMAN

A YEAR'S BUILDING AT OXFORD UNIVERSITY.

In accordance with its usual custom the "Oxford Times" gives details of the chief building improvements, etc., which have been carried out in the University and City of Oxford during the twelve months preceding the October term. From this valuable resumé we extract and condense a few particulars of the work done at the University buildings. During the Long Vacation a good deal of restoration work has been executed at various colleges, while the additions to Brasenose and Oriel are now completed. Important structural alterations, involving an expenditure of upwards of £20,000, have just been commenced at the Radcliffe Infirmary.

Exeter College.—Stonework to front quad restored.

Botanical Gardens.—Large additions to buildings. Laboratory extended, and new system of heating installed. South front of lecture-room enlarged.

University College.—Restoration of the whole of the High Street front completed, with new cills, string-courses and labels, and part new jambs and ashlar. Care has been taken to reproduce the old details and lines of the old work.

University Museum Old Library.—New fire-proof floor, area about 80 ft. by 24 ft., over the south wing, and various other alterations have been carried out by Messrs. Symm and Co., and the Kleine Patent Fire-Resisting Flooring Syndicate, Ltd., under the direction of Mr. J. R. Wilkins, architect.

Merton College. — Library roofs stripped, timbers strengthened, Stonesfield slates relaid. East and south garden fronts of Fellows' Quad restored, and several chimney stacks re-built.

Queen's College.—Restoration of Clock Tower completed. Old lead covering of the dome superseded by copper. The stone mouldings, etc., have been carefully reproduced, under the direction of Messrs. N. W. and G. A. Harrison, architects, of The Turl.

Christ Church Cathedral.—Fabric thoroughly overhauled and restored. Clerestory walls strengthened with tie rods, turrets to north transept and parapets to choir restored in Clipsham stone. The work has been carried out by Messrs. Symm and Co., under the direction of Mr. W. D. Caröe, F.S.A.

Wadham College.—New smoke-room constructed in roof over Common Room, with oak staircase from the Common Room Lobby to the new room. This room has an oak floor, and has been panelled in oak from floor to ceiling. The work has been carried out under the direction of Mr. T. G. Jackson, R.A.

Bodleian Library.—Old heating apparatus taken out and new put in, with large channels for the pipes, which have been constructed from the boiler-house across the quad, and through the proscholium. The consulting engineers are Messrs. Dolby and Williamson, and the work has been carried out by Messrs. Symm and Co., and Messrs. F. A. Norris and Co., engineers.

Radcliffe Camera.—Important and extensive additions to the Radcliffe Camera, after being in progress for upwards of 18 months, were completed early in the present year. Two under-ground floors have been added, each measuring 126 ft. by 95 ft., and the rooms, which are lit by electricity, have been fitted up with book-cases with sufficient accommodation for a million and a quarter volumes.

Oriel College.—New buildings at Oriel College from the design of Mr. Basil Champneys opened. The new building forms part of an enlarged quadrangle, which includes that originally appertaining to St. Mary Hall. The accommodation is for 17 undergraduates and two tutors. There are also lecture rooms and treasurer's rooms.

New College.—A further portion of the south front towards Queen's Lane restored to match as nearly as possible the original work. Clipsham stone has been used for all the windows and moulded work, the plain facework being in Doulting stone. Sir Charles Nicholson (Nicholson and Corlette) was the architect, and the work has been executed by Messrs. Knowles and Son, of Holywell Street.

Union Society's Extensions.—Completion of Union Society's new buildings. Messrs. W. E. Mills and Thorpe, of Oxford, are the architects. The style is reminiscent of Tudor architecture, and there is a good deal of carving work, which was modelled and sculptured by Messrs. James and Arthur G. Rogers, of Oxford.

Lincoln College.—Approach to the Common Room, Bursary, and No. 3 stairs considerably improved, the moulded jambs of doorways being restored in Clipsham stone, the walls re-plastered in stucco plaster, and the lower parts panelled with wainscot oak, fumed and waxed. New doors have been fitted, and a cupboard erected for gowns, etc. The work was executed by Messrs. Knowles and Son, builders, Oxford; Messrs, Rogers and Son did the carving, and Messrs. Read and Macdonald, London, were the architects.

Brasenose College.—The new quad at Brasenose, with its carved work on the frontage, was completed during the Long Vacation. The building is in Clipsham stone dressings and Gibraltar stone facings, and accommodation has been provided for 16 sets of undergraduates' rooms, two sets of Fellows' rooms, and guest rooms. The work has been carried out by Messrs. Hayward and Wooster, of Bath, under the direction of Mr. Blake (clerk of the works), who have also added a new study to the Principal's house, and executed various internal alterations. The present contract is the fifth which has been executed under the direction of Mr. T. G. Jackson, R.A., while the carving was entrusted to Messrs. Farmer and Brindley, of London.

Christ Church.—The following works have been undertaken in connection with Wolsey's Kitchen:—The kitchen floor, which had been unduly raised, has been lowered to its original level, the proper proportions of the room, and especially of the great arches over the ranges being thus recovered. The ugly office of the chef, which formerly obtruded itself, has been done away with, and much better and properly lighted office accommodation secured without infringing upon the area of the great kitchen. This latter has also been freed from a steam boiler and other encumbrances, and at the same time refitted with modern cooking appliances. A new and commodious scullery has been formed, adjoining the kitchen in a portion of the main building, probably originally used for a similar purpose. The former small and inconvenient scullery has been demolished, the science building having thus been opened out and its lighting improved, and space being found for a convenient bread-store and servants' cycle-store. New larders, stores, servants' hall, coal-stores, etc., have been erected
around the kitchen yard. In connect
with these works the approaches from
kitchen to the hall have been opened
and properly lighted, and generally
fullest possible consideration has be
given to matters of sanitation, ventilati
and cleanliness. The work has b
carried out by Messrs. Symm and C
from plans prepared by and under
instruction of Mr. W. D. Caröe, F.S.
and the engineering work has been e
cuted by Messrs. Adams and Son.

ENQUIRIES ANSWERED

Question of Datum Line.

E. W. J. writes: "Plans were pas
by the Corporation for a bakehouse fo
ing the basement of a block of buildin
having on one side a roadway 12 ft. wi
on another an open yard, and on the ot
two sided buildings. The floor of ba
house is less than 3 ft. below the 12
road and yard immediately adjoining.
inspector of factories now says that i
an underground bakehouse within
meaning of Section 101 of the Fact
Act, 1901, from the fact that the floo
more than 3 ft. below a street in front
the building sixty yards away. Section
of the Factory Act, 1901, gives the dat
from which the measurement to floo
to be made as "the surface of the foot
of the adjoining street or ground adjoin
or nearest to the room." The inspe
claims that measurement may be ta
from any of these surfaces, and he el
to take that of the street which is
highest. There appears to be no de
tion of a 'street' in the Factory Act,
in the Public Health Act, 1875, the de
tion includes any road, lane, footw
square, court, alley, or passage. Can
refer me to any case that has been t
on this point?"

—I can find no decided case deal
specifically with this point. Do not
words of the Act, which you quote, "n
est to the room," supply precisely
answer which you require? I am of opi
that the measurement should be ta
from the street, roadway, or yard, w
forms the immediate entrance to the b
house itself, or which forms its princ
source of light and air; in this case a
rently the 12 ft. roadway. F. S.

Acoustics of a Council Chamber.

J. W. writes: "Please supply infor
tion as to the improvement of acousti
a small Council Chamber by the appl
tion of wires. The difficulty is that m
bers in one part of the room cannot
what is being said by those in ano
part. The apartment is 35 ft. by 27
23 ft. 6ins. high, and semi-circular at
end."

—There are no available data for
adjustment of wires to overcome aco
difficulties, each case being treated ex
mentally until improvement is mani
Even the reasons for improvements
uncertain, and cases are recorded w
cross wires, which had proved quite ine
tive when first fixed, met with comp
success when fixed a few feet hig
Blind cord, which has sometimes
used in small rooms, is less conspic
when fixed than might be thought
sible; but strained copper wire is n
usual. There may be other remed
querist should consult the pamphlet
"Sound in Relation to Buildings,"
H. W. Burrows (R.I.B.A., 9, Con
Street).—G.

CONCRETE AND STEEL SECTION.

(MONTHLY.)

Institute Meetings.

There is surely wisdom as well as courtesy in the common practice of allowing a member introduce a friend to the meet- gs of professional institutions, and rhaps the practice might with advant- e be extended. It is useful, as well as eresting, for an architect to drop in casionally at a meeting of engineers, d vice versa, in order that the one may able to inform himself at first hand to what the others are doing and think- g; while the presence of "strangers," e that of guests in a dwelling, is refresh- g and stimulating, preventing the in- ests from stagnating or becoming rely sectional, and perhaps dissipating y undue tendency towards "family s"; societies, as well as families, main- ning their "company manners" when ests are present. But of course the chief ound upon which it may be urged that se mixed assemblies should be en- uraged is found in the opportunities ey afford for broadening the field of owledge. To that end it would be grati- ng to find, for instance, a larger attend- ce of architects at the meetings of the ncrete Institute, and an increasing mber of concrete specialists taking an tive interest in the meetings and trans- tions of the R.I.B.A. Even assuming at as a result of this free intermingling, e gain in definite technical knowledge uld not be very great, and that in fact the practical information that is worth eaning is carefully garnered in various blications, there remains the important nsideration of what may be termed mospheric influence. Each society has own particular tone, or turn of thought, way of looking at things. It is import- t that these domestic habits or manner- ns, or this local dialect, should be better derstood, so that unnecessary friction all not arise from mutual misunder- andings. If the meetings can be ren- red to some extent international, as hen an institution invites a distinguished reigner to deliver a paper, or other- se to take part in the proceedings, the spitality is richly rewarded—if not practical information actually im- rted, then almost certainly in the broader d longer vista revealed, and most suredly in the accession of sympathy d cordiality that is in itself energising d encouraging. If it is a mistake to be rochial, it is a still more serious error hug our insularity.

At Home and Abroad.

The Concrete Institute does not seem to be in much danger of lapsing into parochialism or in- ilarity. In fact it is among the ost eclectic of technical institutions. welcomes the stranger within its ates, and it occasionally pays him a turn visit—"at least as far as Paris is," Hosea Biglow puts it; and some day, o doubt, it will see its way clear to the rganisation of visits of inspection to the merican Continent, which is certainly e most prolific field of observation in this rticular line of construction. Perhaps e presence among us of Mr. Richard umphrey, of Philadelphia, President of the American National Association of Cement Users, who on October 26th, as reported in last week's Journal, delivered before the Institute an interesting lecture on "Fire-proofing," may happily result in arangements being made for a tour of the United States by a Concrete Institute party of delegates. It could hardly fail to yield valuable fruits.

Coke-breeze Concrete and Fire-resistance.

Our representative who heard Mr. Humphrey's lecture pronounced it to be most interesting and instructive. Very naturally Mr. Humphrey was found to be firm in faith as to the fire-resisting properties of reinforced concrete construction; and he mentioned that, as we have frequently found occasion to record, Americans have so much confidence in its efficiency that, in quite a large proportion of instances, they do not think it worth while to insure such buildings; they insure only the contents, knowing from many striking instances that a properly constructed cement and steel building may stand intact after a fierce fire within it has utterly destroyed the contents. He suggested that an exterior casing of cinder concrete would be valuable in protecting concrete from actual contact with flame; and it may be recalled that in the Journal of December 14th, 1910, we published some remarkable data on this point which were put forward by Professor Ira H. Woolson, of Columbia University. He reported that the cinder concrete walls of the buildings used for the fire-testing of floors at the university had remained intact after having been subjected to five fire tests of four hours each, with an average temperature of 1,700 degrees Fahr. Professor Woolson's experiments were dealt with at greater length in our issue of May 18th of the same year.

The Endurance of Metals.

For the reasons briefly set forth in the opening paragraphs of these notes, it may be hoped that others besides engineers heard the paper on "The Endurance of Metals," which, prepared by Mr. E. M. Eden, of the Armstrong College, Newcastle-on-Tyne, Mr. W. N. Rose, and Mr. F. L. Cunningham, and detailing experiments on rotating beams at University College, London, was read on October 20th before the Institution of Mechanical Engineers. It was necessarily a highly technical paper, and with its numerous diagrams and other illustrations, appealed to the eye rather than to the ear; but, given the capacity to follow it with intelligence, it must have yielded a rich fund of information on a subject that is of great importance to the concrete and steel specialist, and one upon which he realises the necessity of gathering information from all available sources. The scope of the enquiry may be inferred from the following extracts: "When a piece of metal is subjected to alternating or intermittent stress the metal may fracture after a large number of alternations or repetitions of stress, although the maximum stress applied is considerably less than would be required to fracture the material with a single application." The tests described in this paper were undertaken with a view to finding if possible the form of the stress-repetitions curve for any one material, and to determine the effect of speed, or rate of alternation of stress, on the stress-repetitions curve and on the limiting resistance for an indefinite number of repetitions. The testing-machine was specially designed and built with these objects in view, but the tests deal also with the comparative endurance of various materials and with the effect of rests, vibration, surface and form of test-piece, and annealing on endurance." Naturally the paper is chiefly interesting to engineers; but the concrete specialist will find in it much that is instructive or at least suggestive; and in view of this fact it would be interesting to know to what extent the various institutions exchange publications. There is some reason to fear that this eminently useful practice is less honoured in this country than it is elsewhere.

An Elementary Treatise.

An elementary manual on reinforced concrete construction should meet with wide acceptance, more especially since the subject is now being taught in technical schools. It is possibly in order to satisfy a realised want that Mr. M. T. Cantell, Licentiate R.I.B.A., has prepared his "Reinforced Concrete Construction: Elementary Course" (London; E. and F. N. Spon, Ltd., 57, Haymarket; pages viii. + 136; price 4s. 6d. net), for we observe from the title-page that he is head of the Architectural and Building Department of the Municipal and Technical College at Brighton. The manual, however, is not like those obscure class-books which require the aid of a teacher for their elucidation; for the explanations are as a rule both full enough and clear enough; although it might be advisable to add, if only in a footnote, brief descriptions of such allusions as that to the Le Chatelier process. The book contains 65 illustrations, a large number of useful formulæ, and many worked examples of their application, these being a feature that will specially commend itself to those who are not mathematical experts. The author, while simplifying the calculations as much as possible, fully realises that "for designing, a fair knowledge of mathematics and elementary mechanics are [*sic*] necessary," and adds that "with this, very little difficulty will be experienced when the distribution of stresses is understood." It is easy either to overrate or to underestimate the mathematical difficulties, and the author does neither. He should, however, have corrected such slips in grammar as that indicated in the passage quoted; and in the preface there is a similar error, where we are told that the author has "arranged all formulæ, and explained its [*sic*] use, in as simple terms as possible."

An Appointment.

Mr. G. H. Gascoigne, late managing director of the U.K. Fireproofing Co., Ltd., has been appointed manager of the ferro-concrete department of Messrs. Powers and Deane Ransomes, Ltd., of 5, Mark Lane, E.C.

REINFORCED CONCRETE IN HAMPSTEAD GARDEN SUBURB FREE CHURCH.

The new inter-denominational church in the Central Square at the Hampstead Garden Suburb, which has been built from the designs of Mr. E. L. Lutyens, F.R.I.B.A., will seat nearly 1,000 persons, exclusive of the choir gallery. An interesting feature is the construction in reinforced concrete of the columns, beams, and domes.

The inner dome has a radius of about 13 ft., and a rise of about 12 ft., the plan changing from square to octagonal by means of beams 4 ft. 6 in. deep and 2 ft. thick; the pendentives being reinforced with expanded metal. The dome proper has a central opening 6 ft. in diameter; the ring round being formed of two 1⅛ in. rods and two 1 in. rods, the 5-16 in. diameter circumferential rods reinforcing the main portion being 12 in. apart, the radial rods at the springing being also at 12 in. centres. The outer dome is built up with timber framing, which is supported by reinforced concrete forming the frustum of a cone 30 ft. 6 in. high, with a diameter of 6 ft. at the top and 21 ft. at the point where it leaves the inner dome. The concrete is 9 in. thick, reinforced at the base with ⅜ in. radial rods at 12 in. centres, and with circumferential rods ½ in. by 3-16 in. flat at 12 in. centres. The rods in the cone come down on the outer side of the inner dome, connecting the two and giving monolithic construction.

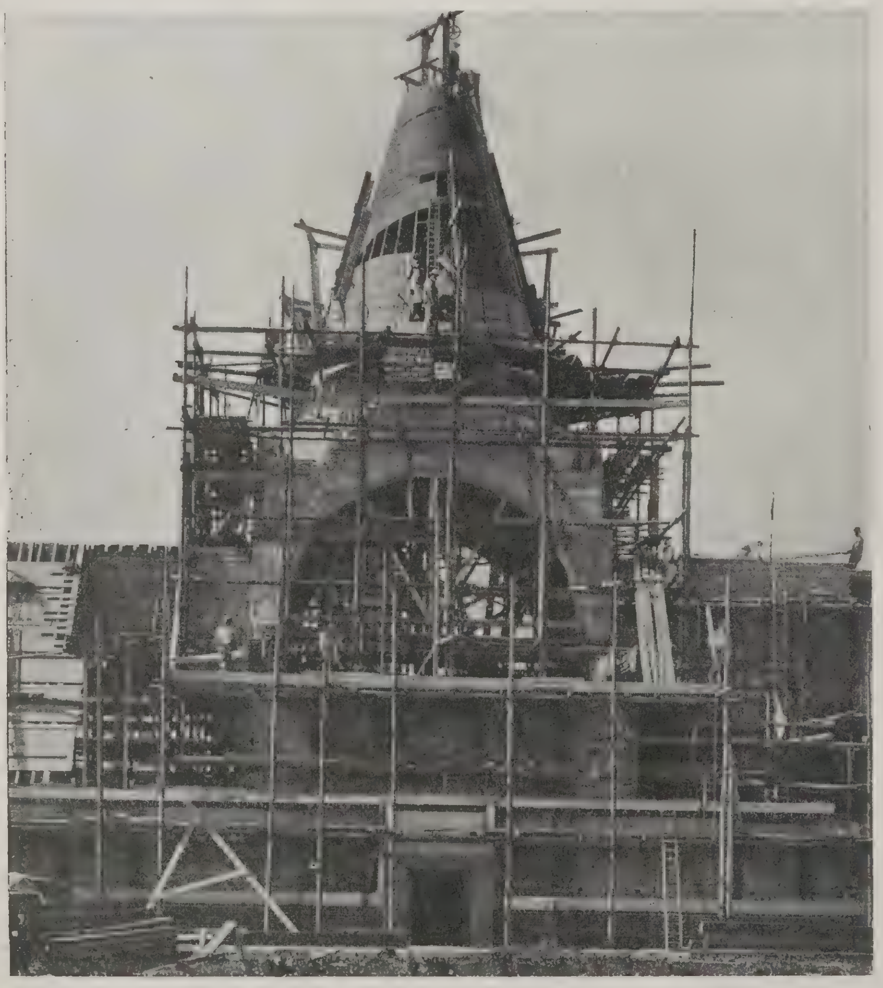
The reinforced concrete construction was executed by the Cubitt Concrete Construction Co., Gray's Inn Road.

THE CHEMIST AND THE CEMENT INDUSTRY.

The first of two lectures on cement was delivered before the Institute of Chemistry by Mr. Bertram Blount last week. The lecturer confined his address to the consideration of calcareous cements, and more particularly to the Portland cement industry, the importance of which, he said, might be appreciated from the fact that the world's production was estimated at 25 million tons yearly, valued roughly at £35,000,000. The industry was essentially a chemical one, and in the interests of the manufacturer and consumer it was, and should be, controlled by the chemist.

Probably the earliest form of calcareous cement was calcium sulphate sufficiently dehydrated to form plaster of Paris. Its disadvantages lay in its lack of plasticity and its liability to attack by water. On the other hand calcareous cements, properly so called, while being plastic, were capable of hardening and of resisting water. It had long been known that some siliceous materials had an advantage over others as aggregates for mortar; these were known as pozzuolanas, and their utility depended on the fact that they contained hydrated silica which interacted with lime and formed compounds more or less resistant to water. There seemed to be no record that limestones were deliberately selected for the hydraulic quality of the lime which they supplied until the time of Smeaton, who in considering of what material he should build Eddystone Lighthouse, ascertained that Aberthaw lime stone was hydraulic, and that those limestones which were most hydraulic contained the largest proportion of argillaceous material. But he argued that th
quality might be improved by the ad
tion of materials known to be capable
conferring hydraulic properties on ord
ary lime, and accordingly he used tra
a pozzuolanic material.

The second lecture, to be delivered
wards the end of this month, will refer
the chemistry and testing of cement.



FREE CHURCH HAMPSTEAD GARDEN SUBURB: VIEW SHOWING CENTERING FOR CONCRETE CONE. E. L. LUTYENS, F.R.I.B.A., ARCHITECT.

METALLIC CEMENT AND DIHL MASTIC.

SOME USEFUL RECIPES.

The following recipes, which are tra
lated from a volume on masonry pract
in France, published by the Professio
Association of Masonry Contractors
Paris and District, may, it is hoped,
found of practical use in this count
although the details may require oc
sional modification in conformity w
British materials and conditions:

Metallic Cement.

Used in France for the repair of sm
damages to hard stone. The meta
cement is of great solidity, and becon
as hard as the stone itself. It is a
used to hide natural defects in the sto
Its composition is as follows: One part
oxide of zinc, two parts dust of the sto
itself which has to be imitated pas
through a very fine sieve. To this m
also be added one part of powde
earthenware or sandstone which augme
the hardness of the product. The
quired tint is obtained by adding yell
ochre, red or black, etc., care being tak
to mix all these ingredients qu
thoroughly.

To mix this cement, metallic water
used. This is obtained by dissolvi
fragments of zinc in hydrochloric a
diluted in the proportion of two parts
water to one part of acid, which is nec
sary to effect the dissolving of the zi

Before the cement is applied, the p
to be treated must be well washed and l
to dry. Afterwards slightly damp the p
to be repaired with a brush dipped in t
metallic water. Then mix very thickly t
cement with a small quantity of t
metallic water. Spread this product up
the stone, pressing heavily to ca
adhesion.

The cement sets quickly, and acqui
the hardness of stone. After a varia
time according to the temperature, a
when it has acquired a certain hardne
it can be dressed with a chisel or by mea
of a toothed hammer, exactly as if it we
the stone itself. To refix a piece whi
has been splintered off one may use pu
zinc-white mixed with metallic water, a
proceed as above described.

Dihl Mastic.

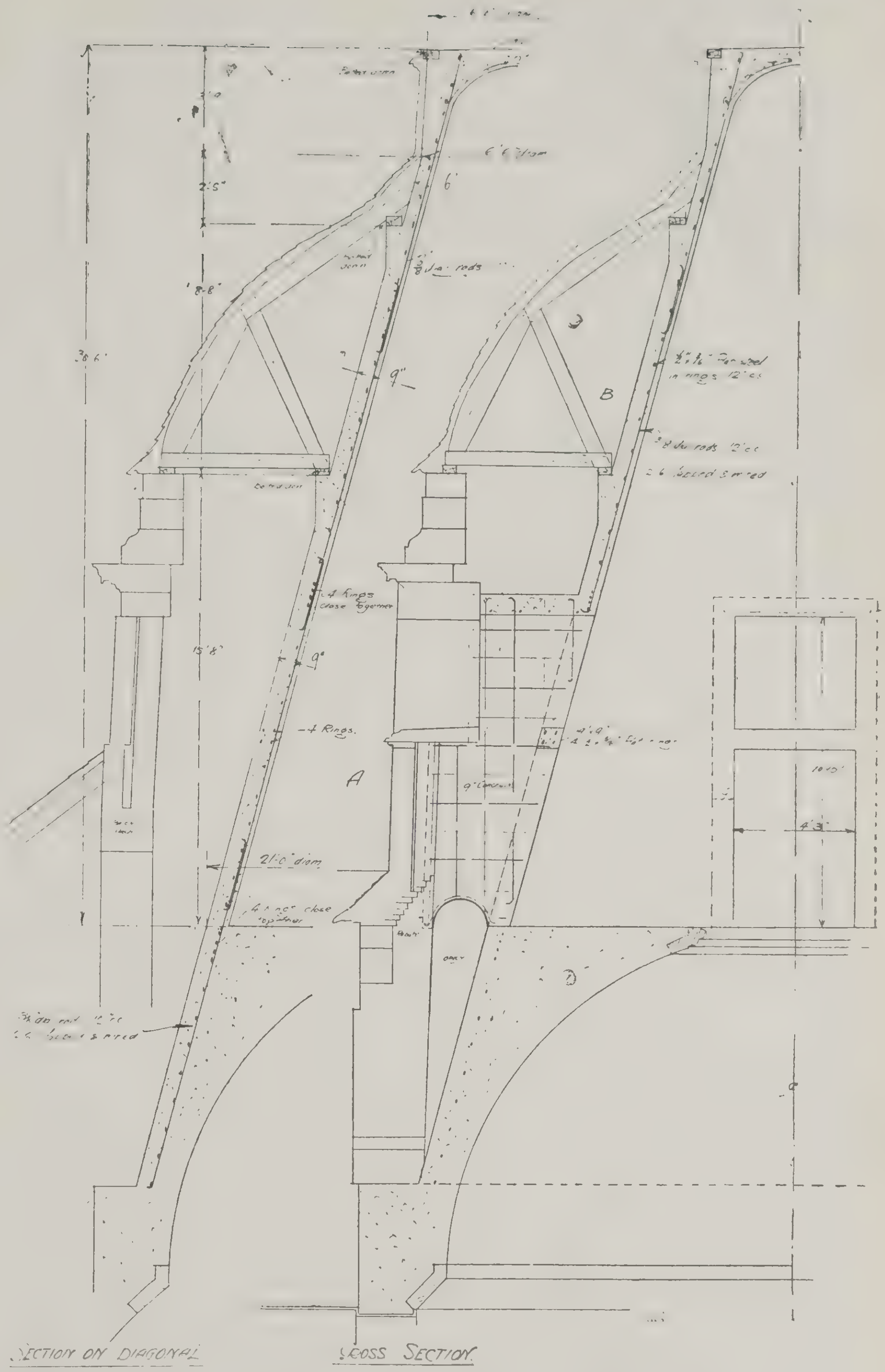
This mastic is generally used
marble work, or when an approximat
polished surface is required. It serv
to fill up all the pores of the stone, a
becomes very hard. It is composed
nine parts of pounded brick or well-bak
potter's clay to 1 part of litharge (oxi
of lead), the whole well kneaded up w
linseed oil in the proportion of 25 lit
of linseed oil to 100 kilos of mastic.
use it, take the same precautions as th
indicated for the metallic cement; th
allow to harden, and finally rub do
with sandstone, wetting it slightly to
move the abraded parts.

STEEL AND CAST-IRON PIPES.

onsiderable discussion has arisen as to relative merits of steel and cast iron es; and having had very many years' erience as an inspecting and consult- engineer of both steel pipes and cast- pipes, many thousands of tons of h class having passed through his ds, Mr. E. C. Carey, of Glasgow, ms to be in a position to offer an un- ssed opinion on the subject. There is, thinks, ample room in the world for h steel pipes and cast-iron pipes. Each s has its distinctive advantages and dvantages.

aking extreme cases, he says, no ex- ienced responsible engineer, on being ed to advise on pipe lines, say, for a ign mine reached by a long and diffi- t sea voyage and thereafter by trans- t on mules' backs, would for a moment aside the great advantages of steel es in their immunity from breakage in dling and transit, and in their light- s in weight for transport, especially if re is mountain transit on mules' backs. question of corrosion would not bulk gely if the mine had an ascertained of only a few years. Similarly, for pipe line for the water supply of a ge town, situated near high-class pipe ndries, to be laid in ground in which movement is anticipated, with possibly eavy traffic overhead, and where dura- ty is, of all things, desired, the claims ast-iron pipes would be carefully con- red.

n short, each job must be considered ctly on its own merits; and if intend- purchasers of pipes seek expert advice to their particular requirements, they be on safer ground than by falling line with the idea that the use of er steel pipes or cast-iron pipes solves entire difficulty. In the case of lge work the day is long past when exclusive employment of stone, brick, l, or concrete is advocated, even by most ardent adherents of each. Every must be considered on its own merits, that is where the skilled engineer es in. It would be as retrogressive to mmend any one class of bridge-build- materials to the exclusion of all others to recommend the universal employ- t of steel pipes to the exclusion of cast- pipes, or vice versa.



FREE CHURCH, HAMPSTEAD GARDEN SUBURB: CONSTRUCTIONAL DETAILS OF REINFORCED CONCRETE CONE AND OUTER DOME.

IRON AND STEEL IN AUSTRALIA.

he New South Wales Government ntly appointed Mr. Frederick Wilson l, a British iron and steel expert, as al Commissioner to investigate the ability of Australian ores for the manu- ure of iron and steel and the cost at h the different sorts of iron and steel ired by the various Australian Govern- ts could be produced, including rails bridges and plates for building els. Mr. Paul was also to report the existing arrangement with pri- ironwork companies.

r. Paul now reports that he is satis- that with a blast furnace and plant pped on modern lines, pig iron, com- ng favourably with English hematite iron, can be produced in Australia cost of 54s. per ton. Mr. Paul also nates that the average cost of steel , fishplates, angles, girders, etc., with any bounty would not exceed £6 10s. per ton, and ship and boiler plates £7 per ton. The initial cost of the manufacture of galvanised sheets would be about £16 per ton, but this would be reduced with an increased output to £14.

Mr. Paul recommends that in any future development of the iron industry on a scale commensurate with the requirements of the Commonwealth the blast furnaces and works should be situated near the seaboard.

He expresses the opinion that the success of the manufacture of iron and steel in Australia must depend largely upon the co-operation of the States in drawing their supplies from a common centre and in the establishment of the necessary works. This would entail an approximate expenditure of £1,500,000. "The question may be pertinently asked," Mr. Paul continues, "whether Australia should not now take her place among other nations in making provision for her own requirements."

Rebates in the Steel Trade.

An important circular was issued on November 1st to consumers of steel in Scotland and Belfast, outlining the scheme whereby it is proposed to grant a rebate of 4s. per ton, provided no similar material is purchased from makers other than those whose names are appended to the circular. The rebate becomes payable in the fourth month following delivery. Consumers may withdraw from the arrangement on giving 12 months' notice in writing, but no consumer is entitled to give such notice until six months from the date of the circular. The arrangement does not apply to material sold for export.

A NEW SYSTEM OF REINFORCED CONCRETE UNDERPINNING.

One of the most common difficulties of underpinning is that of ensuring that the several lengths of blocks or piers inserted are free from foreign substances which are apt to prevent proper adhesion of the surfaces. It is found that the ordinary workman is not always careful to provide against the too common accident of a film of earth or clay settling on the first piers while the intermediate pieces are being filled in. Consequently there may be at least one doubtful joint, and the stability of the whole work is endangered by this vital and fundamental weakness. Mr. C. R. Price, of 87, Bishopgate, E.C., has invented a method of rendering such accidents impossible. Briefly, this method is as follows: Supposing that the concrete is to be 3 ft. deep, a 9 in. deposit is laid at the bottom, and on this is placed a length of strong and large-mesh expanded metal curled up at the ends, over which are placed removable sheet-iron covers to protect the work while the remainder of the concrete is being filled in. When the intermediate pieces are about to be placed in position, the curled ends are straightened out over the 9 in. of concrete in the bottoms, from each side and towards one another, a further piece being laid over the joint to strengthen it; the result being a continuous length of adequate reinforcement throughout the entire length of the underpinning, thus adding enormously to the strength of the work. The curled ends of the expanded metal are at first esconced under the shoulders of the somewhat T-shaped blocks; the middle block of three being inverted so as to form with the others a grooved and tongued or joggled joint. The object attained by Mr. Price's system, therefore, is the insurance of a joint that is entirely clean, and immensely strong not only on account of the adhesive setting, but also because of the interlocking joint and the reinforcement. The accompanying illustrations show the system very clearly, demonstrating at a glance the superiority of the new method; for which it is further claimed that while in any circumstances the cost is very moderate, there is an actual saving as compared with the ordinary method when district surveyors accept the lesser depth of reinforced concrete which is sufficient with the new system: of which, we understand, Mr. Price will be glad to furnish further particulars to anyone who has a professional or practical interest in them; and the importance of the problem, no less than the ingenuity of its solution, will certainly stimulate enquiry.

DESIGN AND CONSTRUCTION OF GASWORKS.

A paper on the "Design and Construction in Gas Works," read before the Junior Institution of Engineers by Mr. George Evetts, contained details of the principal requirements for the construction of a plant for the manufacture of gas. The site for a gasworks, the author said, should be chosen with great care, and attention should be paid to the following points:—(a) Access of river, canal, or railway; (b) lowness of level, but avoiding danger of flooding; (c) suitability of the ground for stable foundations. Trial holes should be taken, which would give information on this point and indicate whether building material might be got out; (d) class of surrounding property. The distance from the centre of supply must also be considered. The extra cost of land situated centrally should be placed against the cost of long trunk mains, other considerations being equal. In modern distribution, however, by the use of boosters for long-distance transmission, the diameter, and therefore the cost, of such trunk mains might be reduced. The general considerations in the design of the various buildings and plant were:—(a) Economy in original cost and in maintenance of works; (b) simplicity, and the choice of suitable materials; (c) roomy and lofty buildings of ample size for present and future needs; (d) suitability for extensions without excessive destruction; (e) cost of handling materials, and of manufacture; (f) easy and congenial working and supervision.

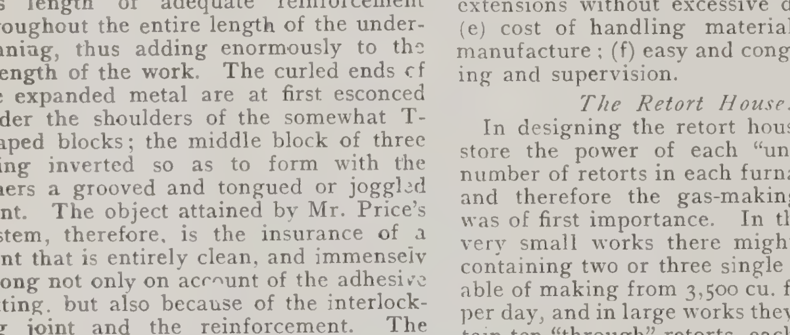
The Retort House.

In designing the retort house and coal store the power of each "unit," or the number of retorts in each furnace or arch, and therefore the gas-making capacity, was of first importance. In the case of a very small works there might be arches containing two or three single retorts capable of making from 3,500 cu. ft. per retort per day, and in large works they might contain ten "through" retorts, each 20ft. long. The latter size, which could be nearly filled with coal by machinery, were capable of making up to 20,000 cu. ft. per day per retort, or 200,000 cu. ft. per day for the whole arch, of which the actual brickwork would occupy a little over 200 sq. ft. Such a unit was suitable only for very large undertakings, as it was uneconomical to work only a part of the arch, and the settings could not be put into operation readily, as a period of at least two or three weeks was required to heat them.

The two most usual types of retort houses were:—(a) Subway houses, in which the producers and flues with their
slides were all below the general gro
level, and the charging floor was at
about ground level; (b) stage houses,
which the clinkering floor was on
ground level, whilst the charging floor
elevated. There was also an interme
ate type with clinkering floor below
a charging floor above ground level.
distance between the floor levels var
from 5ft. in small subway houses to
in modern large works, the average be
about 8ft. 6in. The selection of the t
depended mainly on the question of fo
dations, more particularly with regard
water level. The ash-pans and fire-b
at the base of the producer must be ab
water level and not liable to floods. Th
if water was found near the surface
stage house should be built. The st
house was more expensive to constr
owing to additional height and extra fl
work. The actual work in the re
bench was identical in each case.
stage house lower floor was safer, m
airy, and more convenient for workm
it offered an easy method for the remo
of coke through floor openings into c
or trucks (which could be arranged in
without interference with men on
stage), and it facilitated quenching.
ashes from the furnaces were more ea
dealt with, being already at ground le
The adjustment of the primary
secondary air slides was an impor
consideration. Some authorities obje
to the stage house on account of vary
draughts, whilst others maintained
it offered a freer air supply, the sub
type being naturally more restricted.

The Retorts.

Having decided on the type and siz
the building, the general arrangem
and the "unit" in each arch, atten
might be turned to the actual retorts.
following points were of importanc
the design of a modern gaseous fired
ting:—(a) Stability of the bench; s
cient thickness of walls; good shap
arch rings. Semi-circular arches
the best, as those which were too
caused excessive side thrust on the
walls. They might also sag and res
the circulation of the heat. There sh
be adequate brickwork or other mat
above the actual arch rings in orde
prevent excessive radiation; (b) full d
of fuel in the producer. For caking c
5ft. was advisable in settings of eigh
more retorts. The grate area in the
ducer should be as large as possible,
1 sq. ft. for each 10 lin. ft. of retort.
through settings had now usually fir
one side only, 10 to 15 per cent. of
being saved in comparison with fire
both sides; (c) arrangement of the re
in the setting for the equal heatin
all retorts; (d) good regenerat
i.e., the heating of the secondary
by means of the waste gases, the
having done their work in the heatin
the retorts. This was effected by ha
a good surface of contact between
regenerator flues and the secondar
flues, carefully avoiding the possibili
a short circuit between the two; (e)
ficient flue and chimney area. A
rule for this was 1½ sq. in. of flue are
each lineal foot of retort for which
chimney operated. The chimney sh
be of sufficient height to cause a pu
the flue, and so enable the waste g
get away; in large houses it was 50
ft. high, but in any case the top shou
well above surrounding buildings
arrangements of slides and general
trol of primary and secondary air.
class material should be used throug
The joints should be very thin; two t



A NEW SYSTEM OF REINFORCED-CONCRETE UNDERPINNING.

ent mortar should be used in all stock ckwork, and fire-clay cement for all brick work.

he vertical retort appeared to be mak- considerable headway on the Contin-, and in several places in this country was giving very good results. The ad-itages claimed were:—More gas made the same ground space, very great sav- in labour charges with increased kes, greater control over the heats, and er capital costs per 1,000 cu. ft. sold. wever, the remarkable results which l been obtained recently from horizontal orts and stoking machinery seemed to e had the effect of retarding the pro-ss of vertical retorts in this country. veral undertakings now sold about 000 cu. ft. of gas made per ton of coal. 1875 the Ratcliff Company sold 9,300, Phœnix 8,800, and other London com-ies less than 8,000 cu. ft. per ton.

ASTIC ARCHES: CALCULA-IONS INVOLVED IN THEIR DESIGN.

EWART S. ANDREWS, B.Sc.Eng. (Lond.)

(*Continued from p.* 390.)

rches with two Hinges (*continued*).

Reaction Locus.

hen dealing with isolated loads—and y load system can always be divided up o isolated loads—the simplest proce-re for obtaining the reactions is by ans of the "Reaction Locus." In prac-e, the load is usually distributed to the h by a number of vertical columns, so t even with a uniformly distributed d on the span, the load on the arch elf is concentrated at a number of nts The *Reaction Locus* in a line which es the point of intersection of the two ctions for any position of an isolated d.

f, for instance, in Fig. 5, KMJ is the ction locus, then, if an isolated P be ced at the point F and the vertical ough F intersects the reaction locus at the lines MA, MC obtained by joining point M to each of the hinges, give directions of the resultant reactions and R_C at the hinges. This gives us line of pressure AMC at once, and bending moment at any point is equal the product of the horizontal thrust H d the vertical distance between the e of pressure and the centre line of the h at the point. If the reaction locus known, and h is its height at the point then the value of the horizontal thrust is readily calculated as follows.

he Δ MAN must represent to some le the Δ of forces at the point A.

$$\therefore \frac{V_A}{H}=\frac{MN}{NA}=\frac{h_F}{\alpha l}$$

$$\therefore H=\frac{V_A \alpha l}{h_F} \qquad (11)$$

d $V_A=P(1-\alpha)$.

$$\therefore H=\frac{P\alpha(1-\alpha)l}{h_F} \qquad (12)$$

t the point F the bending moment will equal to H × MF.

$$\text{i.e. B.M. at } F=H(h_F-y_F)$$

$$=P\alpha(1-\alpha)l\left\{1-\frac{y_F}{h_F}\right\} \qquad (13)$$

Parabolic Arch Rib.

n the case of a parabolic arch, the equa-n to the reaction locus can be readily culated on certain assumptions.

he most important assumption is that section of the rib is slightly greater at springings than at the crown.

eferring back to equation (9) we see t the general equation is

$$H=\frac{\Sigma\frac{yzs}{I}}{\Sigma\frac{y^2s}{I}}$$

If now the moment of Inertia I of the arch rib varies as the secant of the angle of inclination,

then $\frac{s}{I}$ will be equal to $\frac{\delta x}{I_0}$, where δx is the horizon projection of *s* and I_0 is that at the crown (the notation δx indicating a short length in direction x). If therefore we take equal elements δx *along the span*, our equation may be written:

$$H=\frac{\Sigma yz\delta x}{\Sigma y^2\delta x} \qquad (14)$$

Then it can be shown that

$$h_F=\frac{1.6r}{1+\alpha-\alpha^2} \qquad (15)$$

At the centre this gives

$$h_c=1.28r \qquad (16)$$

and at the ends

$$h_e=1.6r \qquad (17)$$

Proof.

The writer has made several attempts to prove these formulæ without recourse to the methods of the calculus, but so far he has not been successful; the problem is recommended to our readers. The number of engineers who have a slight acquaintance with the calculus is, however, increasing, and we think that many will be able to follow the following proof, which attempts to avoid the omission of steps, and is thus necessarily rather long. We emphasise this point because the steps are omitted to the principal text-books which deal with the problem, and many engineers are unable to supply the necessary gaps.

The general equation to a parabola is

$$y=a+bx+cx^2 \qquad (18)$$

In our case, Fig. 5, at A, where x=0, y=0 ∴ a=0. Again at the centre where

$$x=\frac{l}{2},\ y=r$$

$$\therefore r=\frac{bl}{2}+\frac{cl^2}{4} \qquad (19)$$

Finally, at the end C, where x=l, y=0

$$\therefore 0=bl+cl^2$$

$$\text{i.e. } b=-cl$$

∴ in (19)

$$r=-\frac{cl^2}{2}+\frac{cl^2}{4}=-\frac{cl^2}{4}$$

$$\left.\begin{aligned}\therefore c&=-\frac{4r}{l^2}\\ b&=\frac{4r}{l}\end{aligned}\right\}(21)$$

Hence our parabola is given by

$$y=\frac{4r}{l^2}(lx-x^2) \qquad (22)$$

The "arch-square sum" is given by

$$AS=\int_0^l y^2dx=\frac{16r^2}{l^4}\int_0^l (lx-x^2)^2dx \qquad (23)$$

$$\text{Now}\int_0^l (lx-x^2)^2dx=\int_0^l x^2(l-x)^2dx$$

$$=\int_0^l x^2(l^2-2lx+x^2)dx$$

$$=\left[\frac{l^2x^3}{3}-\frac{2lx^4}{4}+\frac{x^5}{5}\right]_0^l=\left[\frac{l^5}{3}-\frac{l^5}{2}+\frac{l^5}{5}\right]-0$$

$$=\frac{l^5}{30}\left[10-15+6\right]=\frac{l^5}{30}$$

$$AS=\frac{8r^2l}{15} \qquad (24)$$

The "load-arch sum" is given by

$$LA=\int_0^l yzdx \qquad (25)$$

The value of z changes abruptly at M.

From A to N it is gixen by

$$z=V_A x=P(1-\alpha)x$$

From N to C it is given by

$$z=V_C(l-x)=P\alpha(l-x)$$

Our integration therefore has to be performed in two steps and equation (25) becomes

$$LA=\int_0^{\alpha l}\frac{4rx}{l^2}(l-x)\ P(1-\alpha)\ xdx \qquad (6)$$

$$+\int_{\alpha l}^{l}\frac{4rx}{l^2}(l-x)P\alpha(l-x)dx \qquad (26)$$

$$=\frac{4Pr}{l^2}\left\{\int_0^{\alpha l}(1-\alpha)x^2(l-x)dx\right.$$

$$\left.+\int_{\alpha l}^{l}\alpha x(1-x)^2dx\right\}$$

The first integral comes equal to

$$(1-\alpha)\left[\frac{x^3l}{3}-\frac{x^4}{4}\right]_0^{\alpha l}=(1-\alpha)\left[\left(\frac{\alpha^3l^4}{3}-\frac{\alpha^4l^4}{4}\right)-0\right]$$

$$=(1-\alpha)\ \alpha l^4\left[\frac{\alpha^2}{3}-\frac{\alpha^3}{4}\right] \qquad (27)$$

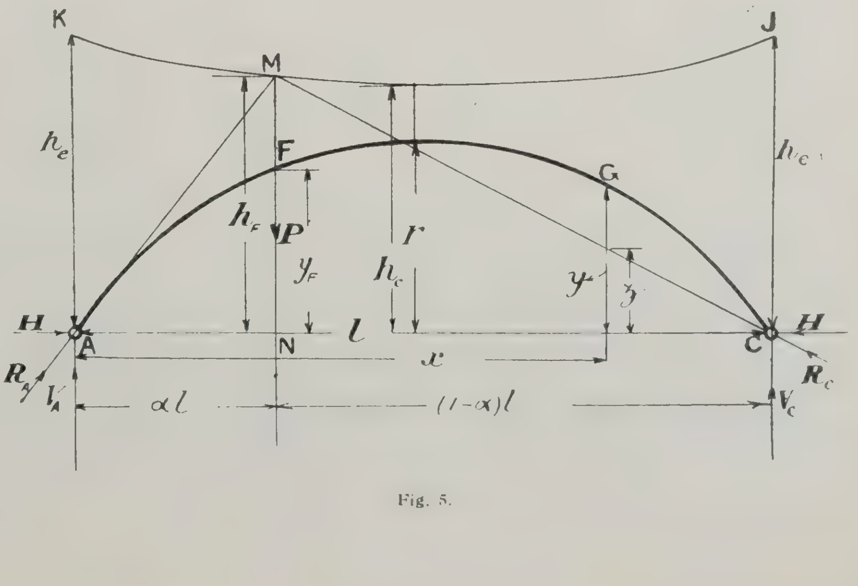


Fig. 5.

The second integral comes equal to

$$\alpha\int_{\alpha l}^{l}(l^2x - 2lx^2 + x^3)\,dx$$

$$= \alpha\left[\frac{l^2x^2}{2} - \frac{2lx^3}{3} + \frac{x^4}{4}\right]_{\alpha l}^{l}$$

$$= \alpha\left[\left\{\frac{l^4}{2} - \frac{2l^4}{3} + \frac{l^4}{4}\right\} - \left\{\frac{\alpha^2l^4}{2} - \frac{2\alpha^3l^4}{3} + \frac{\alpha^4l^4}{4}\right\}\right]$$

$$= \alpha l^4\left[\left\{\frac{6-8+3}{12}\right\} - \alpha^2\left\{\frac{1}{2} - \frac{2\alpha}{3} + \frac{\alpha^2}{4}\right\}\right]$$

$$= \frac{\alpha l^4}{12}\left[1 - 6\alpha^2 + 8\alpha^3 - 3\alpha^4\right]$$

Thus factorises to

$$\frac{\alpha l^4(1-\alpha)}{12}\left\{1+\alpha-5\alpha^2+3\alpha^3\right\} \qquad (28)$$

Adding (27) and (28) we get:

$$\int A = \frac{(1-\alpha)\,\alpha l^4}{12}\left[4\alpha^2-3\alpha^3+1+\alpha-5\alpha^2+3\alpha^3\right] \times \frac{4Pr}{l^2}$$

$$= \frac{(1-\alpha)\,\alpha l^2}{3}\left[1+\alpha-\alpha^2\right]Pr \qquad (29)$$

$$\therefore H = \frac{LA}{AS} = \frac{Pr\alpha\,(1-\alpha)l^2\,[1+\alpha-\alpha^2]}{\frac{3\times 8r^2l}{15}}$$

$$= \frac{5Pl\alpha}{8r}(1+\alpha-\alpha^2)(1-\alpha) \qquad (30)$$

From equation (12):

$$h_F = \frac{P\alpha\,(1-\alpha)\,l}{H}$$

$$= \frac{P\alpha\,(1-\alpha)\,l}{\frac{5Pl\alpha\,(1+\alpha-\alpha^2)\,(1-\alpha)}{8r}}$$

$$= \frac{8r}{5\,(1+\alpha-\alpha^2)} = \frac{1.6r}{(1+\alpha-\alpha^2)}$$

On comparing this with equation (15) we see that this is the result required.

By means of this formula we can calculate the value of h_F for various values of α, i.e., for various position of the load and thus are able to draw in the reaction locus as shown in Fig. 5.

Temperature Thrust.

In a two-pinned arch there will be a horizontal thrust induced due to change of temperature, since the span cannot increase. This is found as follows:—

Let e be the coefficient of linear expansion of the arch. For mild steel this may be taken as

6.7×10^{-6} per °F

For concrete this may be taken as

6.0×10^{-6} per °F

Then if the ends of the arch were free to move, for an increase of temperature t, the increase of the span would be=etl.

But this movement is resisted, and so a temperature thrust H_T is caused.

Going back to equation (6), if we regard the force H_T as causing a reverse movement equal to the expansion, and note that $B=H_T.y$, we get

$$\Sigma\left(\frac{H_T.y^2.s}{EI}\right) = etl$$

$$H_T = \frac{\epsilon tl}{\Sigma\left(\frac{y^2s}{EI}\right)} \qquad (31)$$

For the parabolic arch we have already proved that

$$\Sigma\left(\frac{y^2s}{EI}\right) = \frac{8r^2l}{15EI}$$

$$\therefore H_T \text{ becomes } = \frac{15EIet}{8r^2} \qquad (32)$$

If we take

$e = 10^{-6} \times 6.7$ and $E = 30 \times 10^6$ lbs. per sq. in.

$$H_T \text{ becomes } = \frac{3000\ It}{8r^2} \text{ (approx.)}$$

$$= \frac{375\ It}{r^2} \qquad (33)$$

In this formula I and *r* must both be taken in inch units.

Procedure for Live Loads.

In any given case the procedure is to find, either by actual graphical resolution from the reaction locus or by calculation and tabulation, the horizontal thrust H for a unit load at each of the load points of the arch. Then by taking any distribution of the load we can multiply these values of H by the load at each point to get the total thrust for each point, and then adding together these total thrusts, get the whole horizontal thrust at each hinge. We are then in a position to draw the line of pressure for the given loading, and thus can read off the bending moment at each point. We get the maximum and minimum stresses in most cases when the live load covers first one half and then the other half of the span. For irregular load systems it will require a large amount of work to get the maximum B.M. at any point, but this is also the case with a simply supported beam carrying the same loading.

If we are designing an arch, and do not know what the section is going to be, we cannot find the temperature stresses at first.

We may therefore first find a trial suitable section neglecting the temperature stresses, and then find the temperature thrust for this section. A new line of pressure can then be drawn for the combined load and temperature thrusts, and a fresh computation of stresses can be made; if this necessitates an increase of section, this can be done readily, but this will not as a rule make it necessary for further determination of stresses due to the difference in the temperature thrust.

Numerical Example.

Take the case of a two-hinged parabolic arch of 120 ft. span, and rise 20 feet with a live load of 20,000 lbs. per panel, and a dead load of 10,000 lbs. per panel, the load being distributed at 10 points, as shown (Fig. 6).

We will first tabulate values of H at each point per unit load; by symmetry we need only consider one-half of the span.

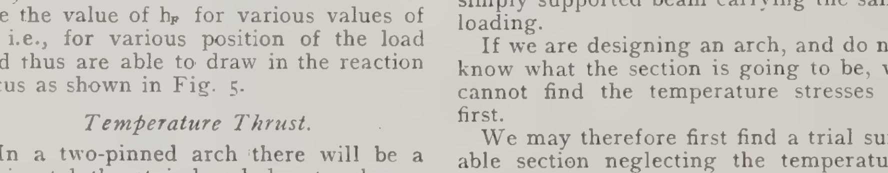


Fig 6

We then get:—

Point	(y ft.)	h (ft.)	H (for unit lo (see equation 12
1	7.2	29.4	.368
2	12.8	27.6	.696
3	16.8	26.4	.953
4	19.2	25.8	1.116
5	20	25.6	1.172

Now take the live load on the left-ha half of the span, and the dead load o the whole span and find the thrust the load at each point. We then get:

Point.	Load. (ten thousands of pounds).	H (in ten thousands o pounds).
1	3	3× .368=1.104
2	3	3× .696=2.088
3	3	3× .953=2.859
4	3	3×1.116=3.348
5	2	2×1.172=2.344
6	1	=1.116
7	1	= .953
8	1	= .696
9	1	= .368
	Total	=14.878

Now calculate the B.M. at ¼ and ¾ spa

The vertical reaction at the left-ha end—

$$= \frac{10\times 10000}{2} + \frac{5\times 20000\times 3}{4} - 15{,}000$$

= 110,000 pounds.

∴ B.M. due to load at ¼ span

=110,000.30—30,000 (18+6)

=2,680,000 ft. lbs.

at ¾ span working from other end wh reaction=70,000B.M. due to load

=70,000.30—10,000 (18+6)

=1,860,000 ft. lbs.

at ¼ and ¾ span y=15ft.

∴ B.M. due to thrust=148,780×15

=2,231,700 ft. lbs.

Max. positive B.M. = 2,680,000
2,231,700
=448,300 ft. lbs.

Max. negative B.M. = 2,231,700
1,860,000
=371,700 ft. lbs.

This gives the maximum positive a negative B.M. at ¼ span as the l crosses, because the negative B.M. a span for the live load on the first half the same as that at ¼ span for the l load on the second half.

(*To be concluded.*)

A WINTER GARDEN AT THE HOTEL CECIL.

Alterations which will cost £50,000 v provide the Hotel Cecil, in the Stra London, with the finest winter garden the kingdom. The "Cecil's" winter gar will be a palace of no mean pretensio and will be furnished throughout in period of Louis XIV. It will be divi into two parts, and its erection will m a transformation of the courtyard of hotel. The main building of the wi garden will be 93 ft. long, 45 ft. wide, a 32 ft. high; and between this and the h entrance there will be a second "garde of slightly smaller dimensions. In larger building afternoon teas will served to the strains of music, and ap from other uses, it will provide one of most perfect ballrooms in London. scheme of lighting through the transpar ceiling has been devised.

All this will not involve great alterati about the courtyard of the hotel, and interesting innovation will be the insta tion of an electric luggage trolley, wh will convey luggage from the hotel trance to the luggage room, a distance some fifty yards.

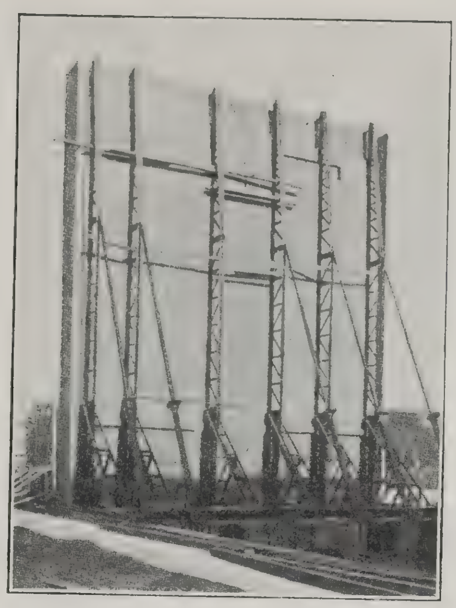
NOVEL METHOD OF BUILDING.

NFORCED CONCRETE WALLS BUILT ON A HORIZONTAL PLATFORM

reinforced concrete three-storey and nent factory building 40ft. high has constructed in Rogers Park, Illinois, A., by laying out the walls on a hori- l platform resting on steel jacks, raise the completed walls to a ver- position after the concrete has set. building, which is 34ft. by 82ft. in is the first of a series of structures built by the Unc Manufacturing pany, which proposes to manufacture us toilet preparations that make a oof building desirable. To further end, United States steel sash, tin- doors, concrete floors, and partitions sed.

e walls of the building consist of curtain walls between 16in. pilasters d on 16ft. centres. To conform with uilding ordinance, the first-storey in walls are 16in. thick. The 2ft. 8in. ers are reinforced vertically with ½in. twisted steel bars. In the cur- valls ⅜in. round bars are spaced 12in. both ways, in both the inside and le walls. The horizontal bars run gh the pilasters. At the corners the extend 12in. beyond the concrete to to a 12in. by 12in. corner piece cast the side and end walls have been l.

e foundations were built before plac- he jacks, which are of the Aiken ted type. The end of the chair sup- g the pin around which the walking revolves, is placed on the footing. other end is blocked up from the ent floor. For the sidewalks the were placed 8ft. apart. The worm g operating the telescoping 9ft. s, used to raise the slab to its vertical on, was driven by a continuous shaft ich power was transmitted by a belt a 5 h.p. steam engine. The side were raised in eight hours. When sition, the slab was still supported jacks at the toe and back, by planks to upturned angles and by bolts 3ft. along each walking beam, fastened . pieces of 6in. channels embedded concrete. Shear on the ⅝in. bolts he toe amounted to the total weight of the wall, 250 tons, minus the friction of the concrete on the form


40-ft. Wall Jacked up.

The slabs were cast within the building with the outside of the walls face up, so that the finishing of ornamental work is all done on the flat, similar to sidewalk construction. A coat of Bay State waterproofing was applied.

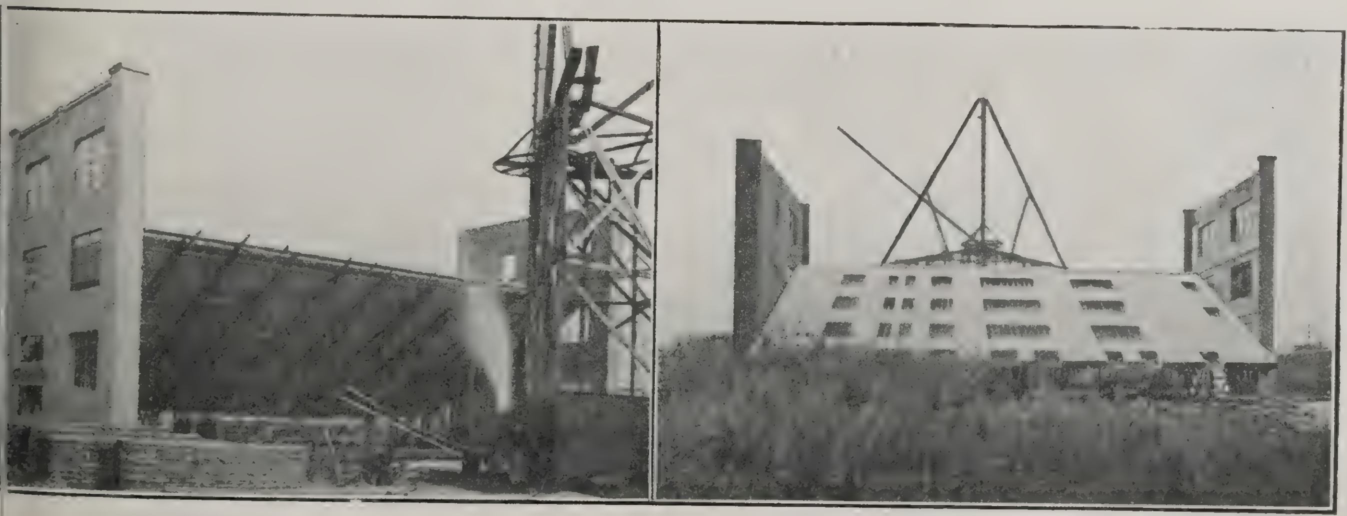
On the ends of the building, double walls are used, with a dead air space of 4in. between the 4in. inner and 4in. outer walls of concrete. This space was obtained by depositing a layer of sand on top of building paper laid over the 4in. layer of green concrete. Building paper was then placed on top of the sand, and the top or outside of the wall poured. The process was continuous, as no time was allowed for setting. When the end walls were raised sufficiently, the sand was rodded out of holes left for the purpose in the bottom of the walls. For the sidewalls a mixture of coke and enough cement to hold it together, about 1.8, was used in place of sand to form the insulation between the two walls.

Grooves for partition walls and floors were left in the side-walls by nailing two strips to the platform and filling in between the strips with sand. Holes for the beam boxes were also filled with sand, placed inside of hollow forms. Special frames were made to hold the steel window sash in place.

For the platform 3in. by 6in. tongue-and-groove yellow pine was laid in random lengths. It was not nailed down, but held to the walking beams by bolts about 18in. apart to keep it from warping. As soon as the whole platform was laid, every other bolt was removed, and the channels mentioned above fastened to the remaining bolts to secure the wall to the walking beams. After the slabs had set for two days, it was raised to place, care being taken to anchor the tail end of the jacks to the concrete floor by cables with turn-buckles, and also by weighting with sand bags. The centre of the wall is about 16in. outside of the supporting pin, and very nearly over the ends of the chairs. A clearance of 2in. between the foundation and bottom of the wall provides a space for grouting.

Both end walls were laid out at the same time, and raised one after the other, as there was plenty of room within the building lines for the platforms. Only one side-wall could be cast at a time, on account of the narrow width of the building. As a protection against the overturning action of wind pressure after the removal of the jack machinery supporting the wall, a cable with turn-buckle was run between eye-bolts embedded in the tops of the walls. On the outside two cables were run from the eye-bolts to dead men about 50ft. away. Turn-buckles were placed in each cable. Although the cables were left slightly slack during a severe windstorm, which caused a great deal of damage to boats on the lake, the engineers did not note any tightening on the guys. It is estimated to require a wind pressure of 25lb. per square inch to overturn one of the 250-ton side-walls having a 16in. base.

A unit floor system is to be used, in which the lower 2⅜in. of the 6in. floor is cast in 3ft. by 15ft. slabs in the stock yard, one on top of the other, with building paper between each slab. The process is a continuous one. Thirty or more slabs were cast in a single pile. The 200 required for all the floors in the building were poured in four days, and stand in six piles. The reinforcing bars are threaded through the forms. Six ½in twisted steel bars are used longitudinally to take all of the tension stresses, and ¼in. round rods spaced 12in. apart transversely are used to make the longitudinal joint and for temperature stresses. When ready to place the floors, these slabs are raised by derrick and placed on top of the beam boxes. Their length is such that they come just to the inner edge of the box


Raising a 250-ton Side Wall.

Front of the same Wall.

BUILDING REINFORCED CONCRETE WALLS ON A HORIZONTAL PLATFORM.

but the reinforcement projects across the beam. A 6in. joint is left between the sides of the slabs, and a 10in. plank placed under the joint to support the slab as well as to make a form on which to place the concrete.

Concrete is mixed throughout in the proportions of 1 part Universal Portland cement to 2 parts sand to 4 parts gravel or broken stone, passing a $\frac{3}{4}$in. ring. The one-third yard mixer used is set in a pit, so that materials can be dumped into it from wheelbarrows without climbing an incline. To prevent jarring and to let the concrete ooze out slowly from the bucket, legs have been placed on the bucket so that it can be set down on the platform directly over the point where the load is to be deposited.

A specially designed derrick with the 12ft. bull wheel placed 35ft. above ground is used to place the concrete and handle all materials. The 50ft. boom covers the whole area of the building and storage space at the sides of the derrick. The apex of the triangular frame over which the 30ft. mast is erected is placed 15ft. away from the centre of the side of the building, leaving space on one side of the frame for the concrete outfit and on the other for a stockyard. The ends of the framework and the apex are all anchored down to 4ft. concrete cubes by cables. The 3-drum Mundy hoisting engine handles a load of 4 tons. The building is being erected by the Monolithic Concrete Construction Company, of Chicago.

Presentation.

At the twenty-fifth annual gathering of the Elstonian Association (past scholars of Elstow School, Bedford), held at the Trocadero, London, an interesting presentation was made to Mr. Norman Thorp, A.R.I.B.A. (Messrs. T. H. Watson and Norman Thorp), of 9, Notting Place, W.). Mr. Thorp is the leading spirit of the association, and the members were desirous of expressing their appreciation of his efforts in some tangible form. The presentation took the form of an illuminated address: "To Norman Thorp, Old Elstonian," accompanied by an antique Sheraton bureau, together with a spirit case and a book with the names of the subscribers.

FEDERATION NEWS.

Yorkshire Federation.

The monthly meeting of the Executive Council of the Yorkshire Federation of Building Trades Employers was held at Urwin's Café, Westborough, Scarborough, on October 20th, 1911, when Mr. A. J. Forsdike, President, who occupied the chair, was supported by 26 delegates from the federated associations.

National Insurance Bill.—Arising out of letters received from the National Federation, and from the Barnsley and Sheffield Associations, it was resolved to enter an emphatic protest against the unnecessary haste with which the Insurance Bill will be forced through Parliament, and in entire disregard of the request of parties who will be vitally interested and materially affected by its provisions, to have reasonable opportunity of mastering its details, especially in view of the drastic variations continually being made to conciliate parties who are not financially concerned. The local associations were requested to send a similar letter of protest to their local members, in addition to the steps which they have already been requested to take.

National Insurance Bill and Accident Insurance.—A letter was read from the Board of Trade stating that contributions for unemployment insurance are required only while the workman is *employed*. It seems clear that a workman would not be held to be employed merely on the ground that he was receiving compensation for an accident from his late employer.

Trade Disputes Act.—Attention was drawn to the valuable observations of the Employers' Parliamentary Council in respect of this Act and labour unionists' conspiracy, which most effectively demonstrated the disastrous results which had followed the preferential legislation granted to trade unions.

"*Fair Wages.*"—Two delegates drew attention to the serious competition their local members were being subjected to on account of tenders being accepted by contractors outside the district, and who were paying less for labour than the rate provided in the rules. The chairman suggested that the local architects should be approached with a view to point action being taken.

Lead Poisoning Inquiry.—The replies of associations were reported as follows:—Bradford: Suggested that workmen should be compelled to provide their own utensils for washing, as the place of work is constantly changing. Supply of hot water often impossible. Confident that a paint with a base of zinc oxide would prove practically as good as white lead. Hull: Consider house painting generally free from cases of lead poisoning, but in view of the proposed regulations, recommend use of white lead to be abolished. Sheffield: Consider house painting should be exempt, as too much is being made of isolated instances. Opinion expressed that use of white lead is not necessarily dangerous if the proper precautions provided are carefully used. York: Decorators of opinion that restrictions of the nature outlined would be impossible to carry out, and sooner than comply with restrictions, they would prefer to do away with the use of white lead.—It was resolved to forward a copy of the various observations for the information of the National Administrative Committee.

National Contract Form:—Sub-contract Form with Specialists.—The proposed revision of Clauses 20 and 28 of the National Form of Contract, and the suggested draft Sub-contract Form with specialists, were carefully considered. It was reported that the Bradford, Dewsbury, Hull, Leeds, Sheffield, and York Associations had no objections to raise to the approval and adoption. The amendments suggested at the meeting of the Northern Centre were considered and approved, and recommended to the National Administrative Committee for adoption.

Employment of Non-union Labour.—It was reported that the appeal of the Yorkshire Federation to the National Conciliation Board had not been heard, on account of the length of time occupied by the Board in consideration of a trade dispute at Leicester, and was left over in the expectation that an appeal would be made in a similar case arising at Sunderland.

The Federation also appealed to the Northern Centre, who ultimately decided, however, after hearing the Sunderland case, and without giving the Federation an opportunity of presenting any observations, that it was not within the province of the Conciliation Board to hear a matter of the nature indicated unless provision was made for the same in the working rules.

The procedure to be followed had been further considered at the Northern Centre meeting, and the Federation was recommended to continue the appeal in respect of the Leeds case, being very careful to conform with all necessary requirements in order that no technical objection could be raised to prevent the main issue being considered. It was resolved to request the Leeds Association to take the necessary steps to carry out the recommendation of the Northern Centre.

Conciliation Boards—Admission of Builders' Labourers.—The notice of the Midland Centre of alteration of rule 19 of the Conciliation Agreement was presented as follows:—"That the builders' labourers be admitted as parties to the National Scheme of Conciliation, and that the labourers' union be empowered to appoint two representatives to sit on the various Boards in all districts where working rules have been entered into between branches of the Employers' Federation and organised unions of labourers. In districts where two or more labourers' unions exist, such unions shall agree together as to the appointment of the said representatives." It was decided to consider the matter at the next meeting.

National Administrative Committee.—It was reported that a meeting of the National Administrative Committee would be held in London on Tuesday, November 7th, at 2.30 p.m.

Operatives' Societies Request List of Federated Employers.—Attention was drawn to the request made by a local joiners' branch of the Carpenters' Society for a list of the members of the local associations for inclusion in the Year-Book, which it was stated this year is going to be a national one. It was resolved that as the benefits obtained by employers of labour were mainly due to the devoted services and self-sacrifice of federated employers, the Federation saw no objections why the names of such employers should not be communicated to operative societies, as being those observing the mutual arrangements and entitled to trade protection.

Date and Place of next Meeting.—Mr. G. Porter, on behalf of the Barnsley Association, invited the Federation to hold the next meeting in that town. The invitation was cordially accepted, and the next meeting fixed for November 16th.—J. DAVIDSON, Secretary.

Cardiff Master Builders' Association.

The monthly committee meeting of this Association was held at the Association Offices on October 19th, 1911, the President, Mr. W. T. Morgan, in the chair.

Hauliers' Wages and Hours.—The Secretary read a letter from Mr. E. Bevin, the organiser for the Dock, Wharf, Riverside, and General Workers' Union, stating that he had not agreed to allow this matter to stand over until the end of the year, requesting us to meet the representatives of hauliers at an early date. The matter was cussed, but no decision was come to pending joint meeting between this association and the diff Master Carters' Association to be held at the same day.

Timber: Increased Labour Charges.—The Se tary read letter giving notice of increased lal charges to come into operation on October 2nd, stated that the matter had been considered by Cardiff and District Builders' Association, wished us to join them in a joint deputation secure a modification of the charges. Resolved, we join with the Cardiff and District Build Association in the steps proposed to be taken them, and the secretary was instructed to enq whether Importers' Association would be prep to meet a deputation in Cardiff, and to state in the meantime instructions had been given to members to pay on the old rate until the ma had been discussed. The Secretary was also structed to communicate with the members of Cardiff and District Builders' Association forw ing a copy of this resolution, and expressing hope that they would pay on the old rate only the present, so as not to prejudice us in the s we were taking in the interests of the two assc tions.

National Insurance Bill.—The Secretary submi tabulated statement on this subject received f the general secretary, dated October 2nd. solved, that a sub-committee be appointed tc carefully through the statement, with full powe draft and send up any suggestions they might l to make without calling another meeting to cons some.—I. WATKINS, Secretary.

London Association of Master Decorat

At the October quarterly meeting of the Lo Association of Master Decorators, various ma of importance were discussed.

The proceedings were opened by an address the President on his visit to the Conventio Derby.

Mr. Wilkinson also contributed largely to interest of the meeting by giving his impress of the Hamburg Convention.

After a discussion on various matters the fee of the meeting was taken on the subject of the r strikes, and the secretary was instructed to sig behalf of the association a memorandum to Prime Minister on the subject.

It was reported that the Water Board had approached with reference to certain charges by them for water used for washing down out of houses; and as the result of the representa made by the association, the practice has been fied, so that a charge is only made where the b ing is being generally repaired and decorate where the work is otherwise extensive, and absolute cleanliness.

It was reported that the Educational Comm is corresponding with the L.C.C., and is at pr visiting their technical schools with a view to d ing a scheme for the better training of decora

The question of white-lead was also discu and it was resolved:—"That as no suitable su tute for white-lead has been found its use be tinued under reasonable regulations."

Cardiff and District Builders' Associa

At the monthly committee meeting of this As ation, which was held at 22, Castle Arcade C bers, Cardiff, on October 27th, Mr. W. T. Mc presided, and here was a large attendance.

Cavity Walls.—Mr. C. Hoare reported letter he had received from the City Engineer, and interview with the Deputy City Engineer, which it appeared that the object we had in had been attained. Resolved, that a hearty vo thanks be given to Mr. Hoare for all the tr he had taken in this matter, and for the su which had attended his efforts.

Timber Imports.—A letter was read from Timber Importers' Association, promising i diate attention to the subject of labour charge

Hauliers' Wages and Hours.—The presiden ported the proceedings at the last meeting o Cardiff Master Builders' Association, and s that it had been decided to apply to the C Master Carters' Association for a copy of rules, so as to see whether they contained any which would conflict with our interests, and another meeting would be called to conside matter further after these rules had been insp

Prizes to Technical School Students.—Mr. reported an interview with the Superintende Technical Instruction, wherein the latter sugg the creation of a fund for the purpose of g prizes to students in building subjects. Resc that a fund be created amongst the membe be independent of the association funds, fo purpose of providing prizes to students in Technical Schools in subjects relating to Building Trade, and Mr. Hoare was asked to a the next meeting of the Cardiff Master Bui Association to lay the matter before them w view of securing their support to the proposa

Llandaff and Dinas Powis Rural District Co—The Secretary was instructed to commu again with the Council as to whether they wou prepared to discuss with us the proposed ne laws before same were finally adopted.

Membership.—The Secretary reported an inc in the membership which was considered sat tory.—I. WATKINS, Secretary.

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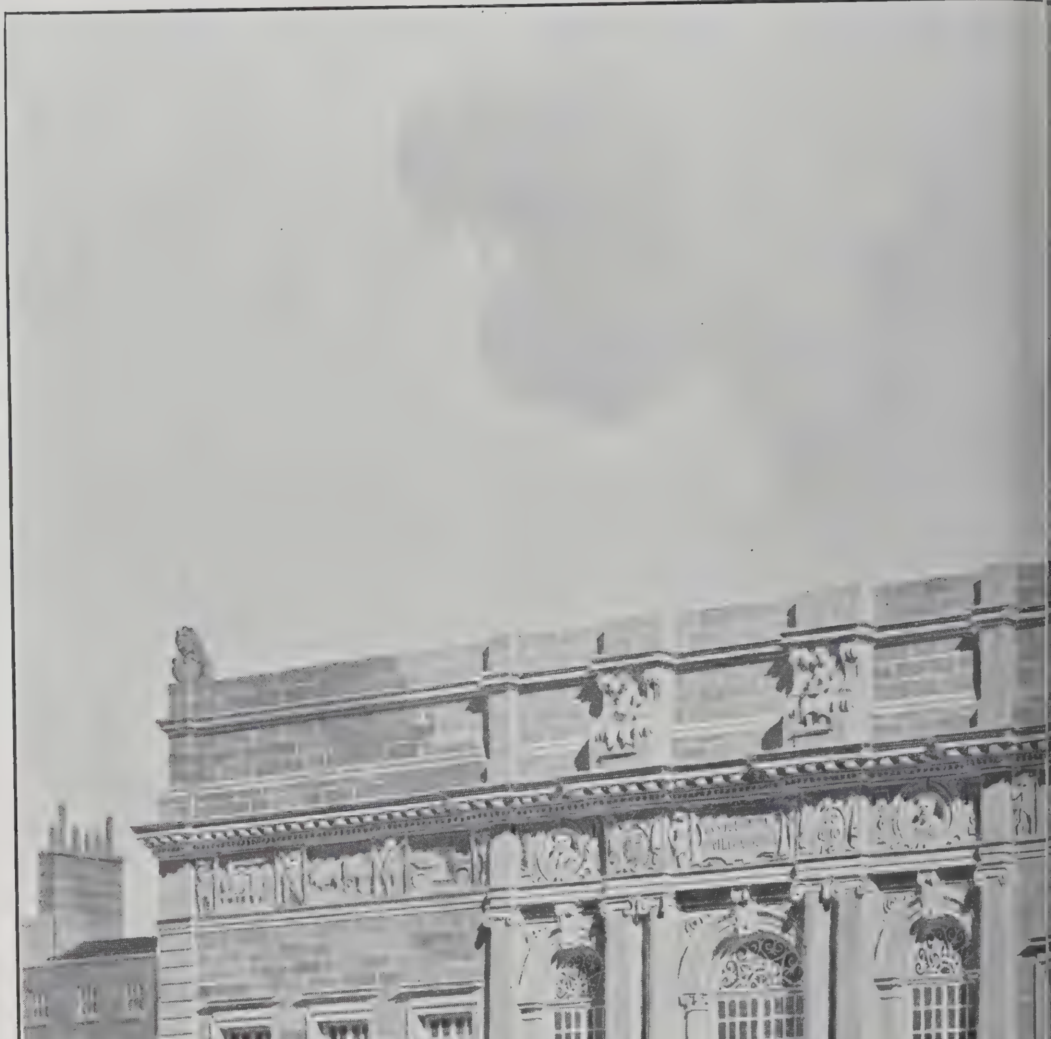
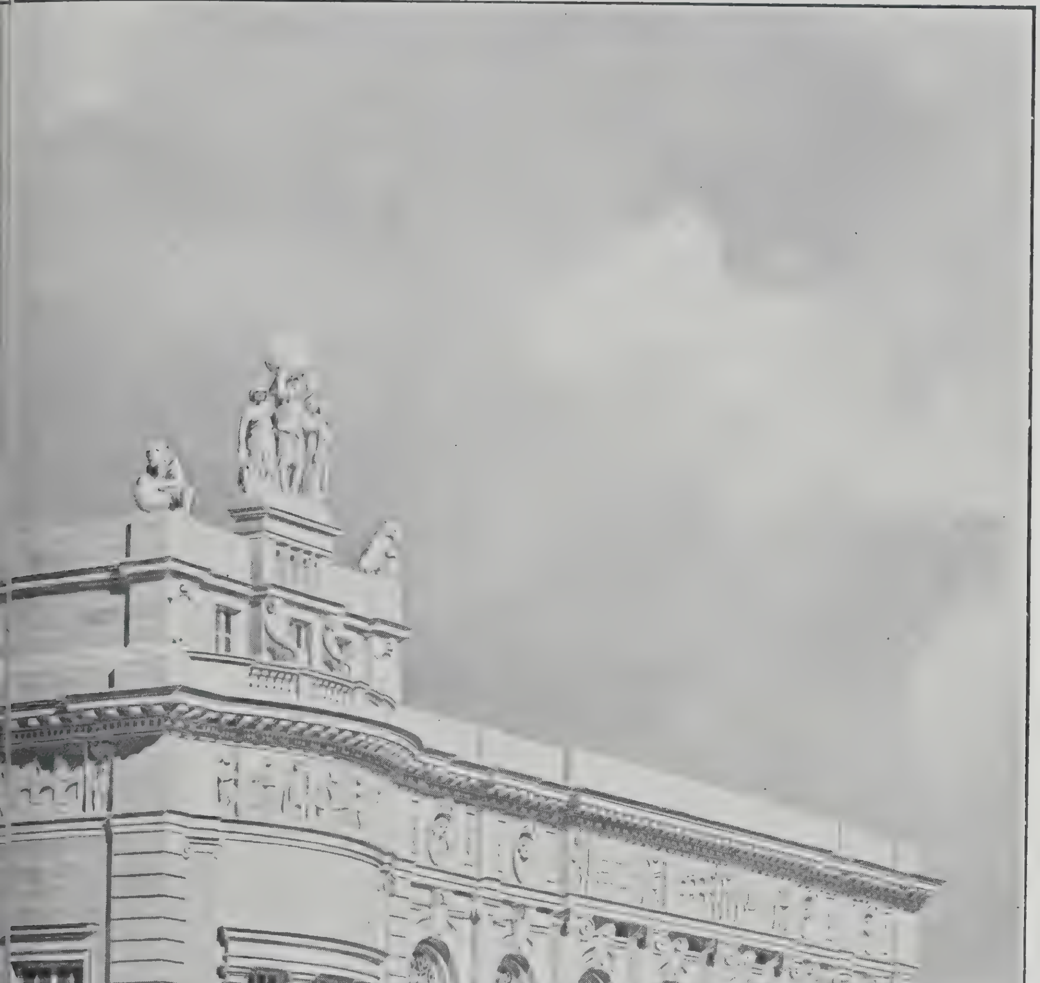
Supplement to The Architects' and Builders' Journal, *Wednesday, November 15th,* 1911.



COMPETITIVE DESIGN FOR THE NEW BUILDING FOR THE INSTITUTION OF CIVIL



ORGE STREET, WESTMINSTER. SIR WILLIAM EMERSON, F.R.I.B.A., ARCHITECT.

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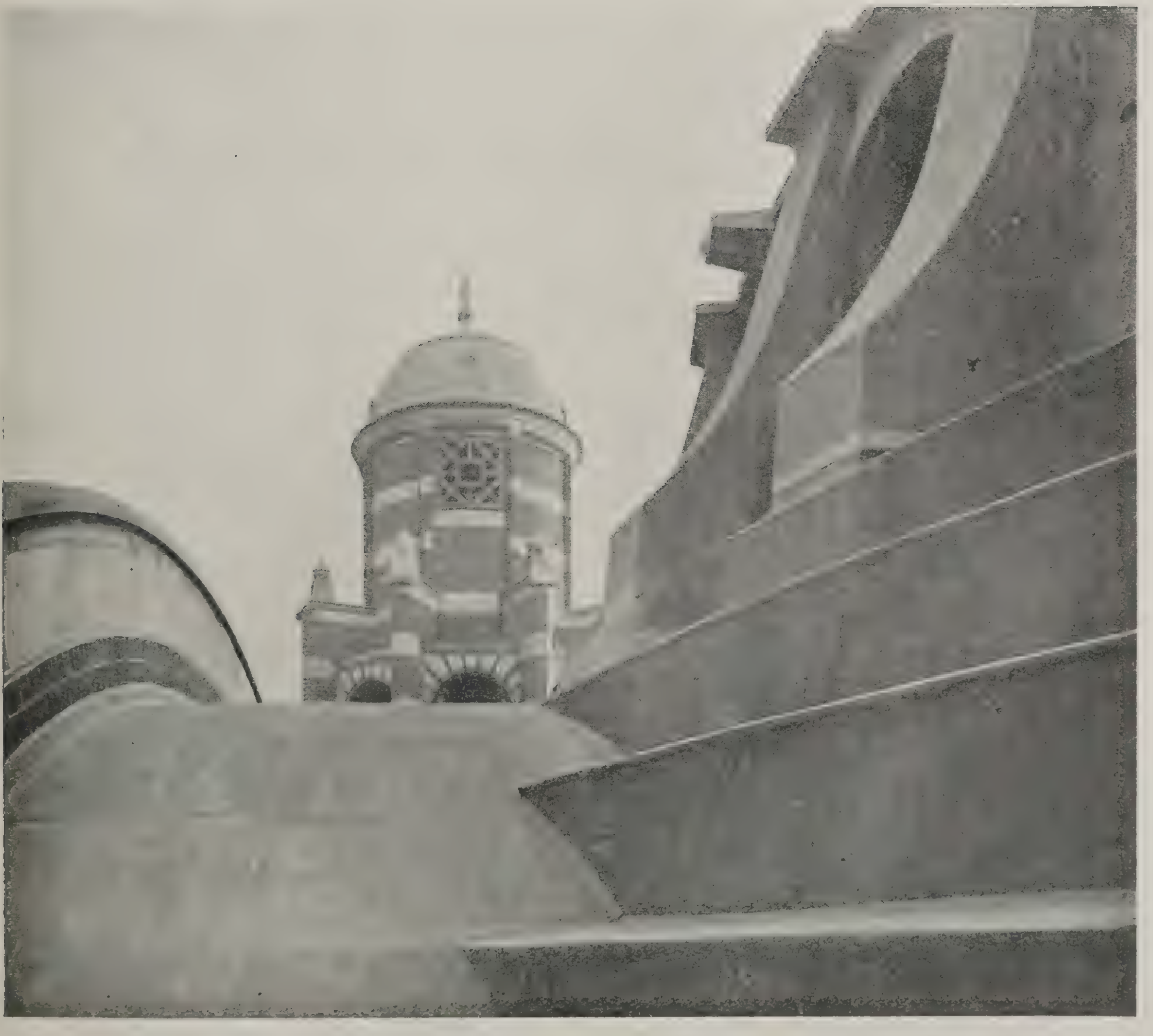
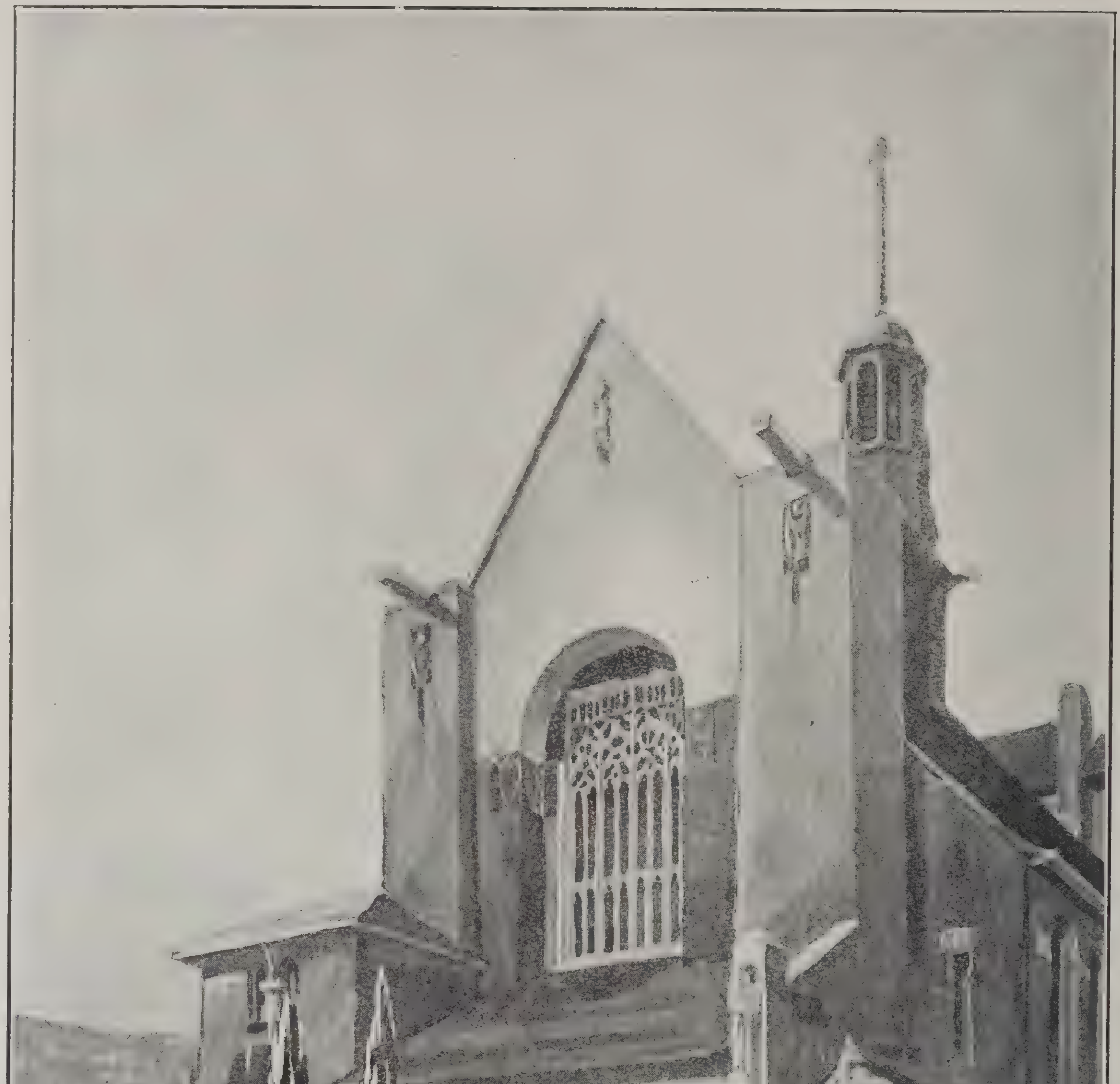


A VIEW ON THE ROOF OF WESTMINSTER CATHEDRAL, SHOWING DOME COUNTERFORTS AND TURRET AT WESTERN END. THE LATE J. F. BENTLEY, ARCHITECT.



THE MEETING HOUSE OF THE BAPTIST CHURCH
CHORLEY WOOD. *HERBERT IBBERSON FRIBA.*
ARCHITECT.

(For particulars see page 527)

THE ARCHITECTS' & BUILDERS' JOURNAL.

NOVEMBER 15th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 877.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

The Question of Official Architecture.

THE address of the President at the opening meeting of the Royal Institute of British Architects was very largely occupied with the subject of official architecture; a subject which may be considered under two aspects, that of general direction of works, and that of actual architectural production; the advantage or disadvantage of official interference with itecture may be quite differently regarded from these two nts of view. It is one thing for an official department to p a general outlook on the course of public improvements, decide what is wanted and how far it can be carried out; quite another thing for the official department to furnish architecture itself.

n this latter point the President brought forward one sideration which is often overlooked in regard to official itectural work, viz., that it is by no means economical; the architectural staff which produces, for example, the e of Works architecture, receives salaries which amount to per cent. on the cost of the work done, without making allowance for rent, rates, taxes, etc., which in the case of employment of an outside architect would all be discharged by the architect himself, instead of being charged on lic funds. Besides, the architects' commission, on the usual fessional terms, would be 1¼ per cent. less than what is l to the architectural assistants of H.M. Office of Works. It vident therefore that official architecture does not make for nomy. That, however, is a secondary question; the main t should be, does it make for good architecture? If so, ould be worth the extra expense; but we fear that exence of the system does not flatter that assumption.

e must not, however, ignore some difficulties which have e recognised. Reference has been made particularly to large number of post-office buildings turned out by the e of Works, and to their generally poor architectural acter. This criticism is quite true in the main; the ially erected post-offices are mostly very uninteresting itecture, though on the whole there has been some imement in them of late years. But there is the practical ideration to be remembered, that the Post Office is an tution under Government control and worked by Govern t officials, who have matured a system of working which ssitates certain provisions in plan and construction, and more convenient to have the plans made by an official itect who knows exactly what has to be provided for, than ave to instruct a new architect on each occasion when a post-office is to be built. One need not make too much is difficulty, but it does exist and should be realised; and eave the official architect to make the plan and arrangets, and then call in an outside architect to clothe them in rchitectural design, would be suggesting a theory as to division of labour in architecture which we should hardly to contemplate. Plan is part of design and should be rded as such. But we would suggest that the difficulty might very well be got over by drawing up model plans for post-offices of two or three relative degrees of importance, accompanied by a schedule of requirements, and commissioning any architect who was appointed to work on these lines. The official department might even in such cases obtain from time to time some new and improved ideas in planning and arrangement, instead of merely repeating those already adopted. We believe we are correct in saying that in France, where many large "Hôtels des Postes et Telegraphes" are built, the commissions for them are given to outside architects; and although it is well known that the French postal system is conducted on most methodical lines, this does not seem to render it necessary for them to fall back on official architecture. Indeed, we remember that an eminent French architect, M. Scellier de Gisors, obtained the gold medal of the Salon one year for his set of drawings for a large post-office; and M. de Gisors was certainly not a merely official architect.

We have mentioned this point, as to the Government department knowing best what it wants in the planning of post-offices, because in fairness it ought not to be overlooked. But, as we have suggested, it is not an insuperable difficulty; and as to the bad effect upon the art of architecture of the employment of official architects there can be no doubt whatever. Even if the nominal head of the architects' department should be an artist, he cannot have time personally to design the buildings required; and the best in any art is never produced by men who do not get the personal credit of their work; it is just the evil of the middleman in applied art, over again; the dealer who sells what anonymous men in his pay make for him to sell. The Office of Works is, in the same way, acting as a middleman in architecture, though not for profit—in fact, it is losing money by the system; but it is giving out shop architecture. And for public works we want something better than shop architecture.

The same reasoning seems to apply to the architectural department of the London County Council, except that, as far as can be ascertained or surmised, architectural work is there carried out on a more economical basis than in the institution at Storey's Gate. And the London County Council architecture is, on the whole, better than that of the Office of Works; some very good buildings have been produced under its auspices. The excellent and businesslike administrator who holds the post of "Architect to the London County Council" obviously chooses his assistants wisely and well. But he being, as the President of the Institute observed, quite an exceptional man, there is no certainty—indeed, no probability—that a superintending architect of equal skill and discretion will always be appointed in the line of succession.

Obviously, therefore, the system of maintaining Government or other official architectural departments is, from the æsthetic standpoint, objectionable because the standard must vary more or less with the personal elements of the staff.

There may be men engaged at one time who can produce good designs, at another time there may not be; it all depends on the degree of judgment of the responsible head of the architects' department for the time being. And it is a very unfair thing to the architectural profession that men who could do good work in municipal architecture should see any chance of this taken away from them except on the condition of sinking their own names and credit to become mere employees in an architectural mill.

The President of the Institute suggested that the Office of Works, after being deprived of a great deal of its present work in the designing of buildings, might fulfil a great and useful mission in acting as a central authority for the devising and carrying out of a comprehensive scheme for the architectural improvement of London, so that local improvements should be planned and arranged for beforehand, and always form an addition to, a step in the realisation of, a general scheme, instead of each local improvement being merely carried out on its own merits; and it is implied that the First Commissioner of Works might be the controlling authority over such a general scheme. In theory this is a splendid idea; but in view of what has been done in the past, we fear that any idea of making the Office of Works the guardian and inspirer of a scheme of London Improvement must suggest the question—*Quis custodiet ipsos custodes?*

The only expedient that would render the Office of Works a safe authority for such a task is a change which many persons have been clamouring for for years; namely, the permanent appointment of a First Commissioner of Works selected for architectural knowledge and genius, and holding his position independently of changes of Government. What real good can possibly be done by treating the position of Commissioner of Works as a mere political *bonne bouche* to be bestowed on any one who has been or may be useful to the Government in office, without any consideration whatever for his special fitness for such a post? The thing is a crying absurdity; architectural improvements have (or should have) nothing to do with politics. Appoint a man to the office of First Commissioner on account of his technical knowledge and architectural genius, and maintain him there to carry on his work undisturbed by changes of Ministry, and we should then have, in the most suitable fashion, the permanent Minister of Art suggested by the President of the Institute. Unless that course is taken, the Office of Works, as far as architecture is concerned, were much better abolished.

Roman London.

AMONG recent additions to the Guildhall Museum is a small oak pile, presented by the Streets Committee, from the foundation of the wall which bounded Roman London on its south side. The Museum Clerk had been instructed to watch a vacant site in Lower Thames Street between Fish Street Hill and Pudding Lane, where it was expected that, if excavations were made, traces of the south wall of Roman London might be found. The question was the more important in that the exact line of that wall was not known. A few weeks ago Messrs. W. Lawrence and Sons began digging on the spot. In making a deep hole for footings, about 5 ft. square, close against the pavement of Lower Thames Street, they came upon a part of the wall. At a depth of some 20 ft. were found three layers of characteristic Roman red tiles, embedded in mortar mixed with pounded tile. Below these were three layers of roughly hewn pieces of Kentish rag, about a foot in diameter. Lowest of all, huge baulks of timber were found, about 2 ft. square, and more than 5 ft. long. These lay irregularly across the line of the fall, and between them were placed, upright, short piles, of which the only one that was brought out whole has been secured for the Museum. These finds only represent the lowest 5 ft. of the wall, which was originally 20 or 30 ft. high, and 7 or 8 ft. thick. The line of the Roman wall along the river banks is thus exactly fixed at this spot, and is shown to be slightly different from that conjecturally drawn in the map of Roman London in the Victoria County History.

French Sculpture at the R.I.B.A.

WE have been asked to mention that the paper
“Modern French Sculpture,” to be read by Mr.
H. Statham at the next meeting of the Royal Instit
of British Architects, on November 20th, will be made
occasion of showing, by lantern illustrations, a large num
of examples of the best French sculpture of recent yea
Owing in great measure to the kindness of a number of emin
French sculptors in lending photographs of their works, it
been possible to make up a gallery of illustrations of Fren
sculpture such as has certainly not hitherto been brought bef
any London audience.

The Case of Portinscale Bridge.

THE history of the efforts recently made to save
picturesque old bridge from what seems to be perfec
unnecessary destruction affords a curious example of
kind of wanton pleasure which official bodies appear to t
in the demolition of old structures, even at the cost of consid
able expenditure of money. The Town Council of Kesw
have at last agreed to postpone the decision till “a local
quiry” has been made, but this seems to be accompanied
a refusal to hear any evidence except from residents in
neighbourhood, in spite of the fact that Keswick owes a g
deal of its prosperity to the money spent by visitors who do
want to see a picturesque spot interfered with; and
Highways Committee appear to have doggedly asserted t
no amount of evidence would change their minds; which
can very well believe. There have been cases where the
servation of old buildings or bridges has been demanded in f
of the fact that they were unfit for their purpose; but this d
not seem to be the case here. The Automobile Club, wh
should be a practical body enough in regard to the use of roa
have stated that they consider the bridge perfectly adequ
for automobile traffic; and Mr. Francis Fox, one of the m
practical of engineers, has shown that the bridge can be
dered perfectly sound by his grouting system, at a cost trifl
compared with that which would be incurred in buildin
new bridge and destroying the old one. In the face of all t
the Highways Committee still want to charge the ratepay
with the cost of a new bridge, and to destroy that which g
pleasure to many, both residents and visitors, apparently
of sheer obstinacy and a short-sighted notion that it is th
duty to “improve the neighbourhood.” There is no reason
with such people, but it is to be hoped that the Town Cou
will listen to reason and maintain a majority in favour of
serving the bridge. They will raise a considerable amoun
public feeling against them if they do not.

The British School at Athens.

THE annual meeting of the British School at Athens
held on Tuesday last week at the rooms of the Soc
of Antiquaries, the Dean of Westminster in the ch
The meeting represented the twenty-fifth anniversary of
school since its formation. During that quarter of a centu
as the chairman observed, the subject of Hellenic archæol
has been elevated, from being regarded as the mere fad
some *dilettanti*, into an essential department of classical stu
and no doubt this change has been mainly owing to the
fluence of the Hellenic Society and of its child, as we may
it, the British School at Athens. The chairman dwelt upon
value of really scientific exploration, as distinct from
amateur and superficial excavation. There is perhaps, h
ever, the question to be considered, how long matter for
exploration will be forthcoming. Already we find from
report, that, the excavation at Sparta being successfully
cluded, “the committee and director have made careful sea
for a new field for the activities of the school.” This t
hope to have discovered in a site on the Dorian promontory
the east of ancient Cnidos; a spot which once bore the Gr

me Akanthos, but is now known by the Turkish name itcha. Mr. Dawkins, the present director of the school, ieves that this was an archaic Greek sanctuary with votive erings. In that case no doubt interesting relics may be ex- cted to be found there. The principal work this year has en on the site in Melos now called Phylakopi. Mr. Dawkins ve a short account of the work done there, and showed ious photographs of archaic ware with primitive forms of amentation. It did not, however, strike us that the objects istrated were of very high interest. The meeting was a ge one. The twenty-fifth anniversary was celebrated by a ner subsequently at the Hotel Metropole, at which the chair s taken by Mr. G. A. Macmillan, the honorary secretary of Hellenic Society since its foundation. At the afternoon eting some very complimentary references were made to the portant part which Mr. Macmillan had taken in promoting success of the Society; compliments which to our know- ge were fully merited, both in respect of the ability and the wearied efforts of the honorary secretary in the interests of Society.

The Restoration Problem.

MR. W. D. CARÖE, in one of a series of articles on church furniture and arrangement which he is contributing to "The Church Builder," has some pertinent ervations on the unwisdom of dispensing with the services the architect when church fittings have to be renewed, and omitting to consult an authority on such matters when, for tance, some devout member of the congregation—often a y—offers to provide some addition having for its object use embellishment, or both. Often, as Mr. Caröe says, every torical feature of the plenishings of a church is completely ed out—"of course, with the best intentions"—because olarship and knowledge were not present to preserve them. such circumstances, is it remarkable," he asks, "that an osing cult has grown up among thoughtful folk, which , in the view even of many of its sympathisers, almost ched the point of fanaticism, against restoration or adapta- of any kind or in any way whatsoever?" This, we think, y well expresses the mixed feelings with which one regards asional outbursts against restoration. One feels that while zeal for preservation is distinctly praiseworthy, it some- es stultifies itself by outrunning discretion. In such cases, ever, the only harm that is done recoils on the zealots; for le no attention is paid in any particular case to a protest is manifestly unreasonable, it may easily happen that the of "Wolf!" will be raised in vain when the animal is ally at the door, or inside it ravaging some precious in- or. On the other hand, it is just possible that the certainty severity of attack may tend to make all but the most ical or most ignorant of restorers walk circumspectly; le, as a *tertium quid*, there is always the chance that it may orise the timid into abstention from necessary works. But, ny case, there is entire truth in Mr. Caröe's assertion "that all the manifold works which the architect has to master he course of his practice, this work is the most difficult, es the greatest call upon his judgment, his temperament, knowledge, and, above all his experience." But the diffi- y of acquiring all these qualifications is rather appalling. the clergy are fond of asking, "Who is sufficient for these gs?"

The Gothicists and the Renaissance.

ECTURING on "The Architecture of Oxford" to the Sheffield Society of Architects and Surveyors last week, Mr. W. S. Purchon, A.R.I.B.A., showed, incidentally, poverty is not always an unmitigated evil. It sometimes s people out of mischief; and, in particular, it is apt to rain the undue ardour of the iconoclast. In the eighteenth ury, he said, it was only lack of funds that in many cases d beautiful Gothic work from destruction; and he added, somewhat unkindly, but we fear with only too much truth, that the architects of the Gothic revival often had too little respect for Renaissance work. *Apropos*, he deprecated, as we have done, the proposal to pull down Butterfield's chapel at Balliol. "If," he said, with most urbane delicacy, "those in authority did not appreciate Butterfield's work, they must at least realise that those who destroyed works of art in the eighteenth and nineteenth centuries had the same excuse to offer, in addition to the one that the buildings which displeased them were often not in the best of repair." That is very daintily expressed, and we feel sure that such temperate and dignified protests must carry much more weight than the *scæva indignatio* which so often fails of its object by provoking a similar temper in the opposing forces.

What is a Dwelling-house?

IN England, the courts have been frequently called upon to give an answer to the question—which is by no means so ridiculously easy as it seems—"What is a building?" In the Scottish Court of Session, the judges have been, in effect, asked to determine the equally elusive question, "What is a dwelling-house?" Now, as on previous occasions we have been constrained to point out, a tenement, and a house, have each a different meaning when one crosses the Border. In Scotland a tenement includes houses; in England a house includes tenements. In the legal action under notice, the question turned on the construction of a phrase in a covenant, in which it was stated that "no houses or buildings of any kind should be erected on the ground other than villas or dwelling-houses with offices." A gentleman had obtained official sanction—or, as they somewhat oddly term it in Scotland, "lining"—for his proposal to erect three tenements of dwelling-houses of single apartments and rooms and kitchen on a plot of land that was subject to a deed that was binding on adjoining holders, who sought to restrain him from putting up this class of building. They held (and Lord Johnston, who dissented from the majority of the Court, agreed with them) that "villas or dwelling-houses" should be construed as meaning villas and dwellings like villas, as opposed to tenements of houses. The majority of the Court, however, held that the probable intention of the instrument was that of excluding buildings of the factory or warehouse class. That seems to be the common-sense interpretation of the phrase as it stands; otherwise the expression "or dwelling-houses" would seem to have no meaning, unless the expansion were permissible to "villas or dwelling-houses of the same class"; and even then it would not be precise in prescribing a dwelling for the sole occupancy of one family or household, as opposed to one that would be adapted for the use of a plurality of independent householders. It is somewhat of a relief to find that, even among the precise and cautious Scots, legal phraseology occasionally admits of various interpretation.

Death of Mr. D. G. Driver.

WE deeply regret to announce the death of Mr. D. G. Driver, secretary of the Architectural Association, which took place suddenly at his home on Saturday last. He was greatly esteemed by all the members of the Association, and, for our own part, we cannot adequately express our sense of the efficient way in which he carried out his duties and the courtesy which he extended to us in all our dealings with the Association. He was a very hard and most enthusiastic worker, and, as we have noticed on many occasions, his services to the Association were warmly appreciated by the members, by whom he was held in the highest personal esteem. Indefatigable in his discharge of the onerous and multifarious duties of the office with which he was so long identified, he was nevertheless the soul of urbanity, and could always find time for helpful and suggestive service to all who sought his aid or his counsel. He will be greatly missed.

ALTERATIONS AND DECORATIONS AT THE COMEDY THEATRE.

The Comedy Theatre in Panton Street, Haymarket, has been extensively altered and tastefully decorated.

The whole of the entrance has been taken out, and fitted with a double row of new swing doors in waxed oak, the exterior reveals, steps, etc., being covered with bastard marble. The old cramped vestibule, with its box-office situated under the gallery staircase; the bar for the stalls and dress-circle which occupied a space alongside the vestibule; the passage running round the back of the dress-circle; and the cloak-room, which was situated in one corner of the bar, have all been swept away, and covering the whole of this space are a new vestibule and box-office.

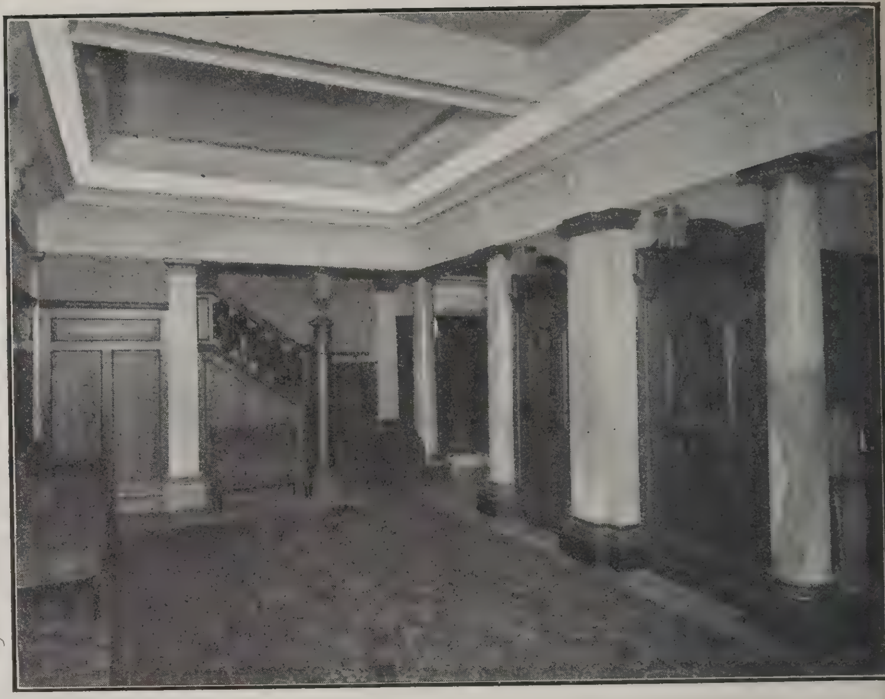
Structural difficulties and different ceiling levels had to govern to an extent the arrangement of the plan. It was desired to form a vestibule as large as possible, with a good-sized box-office conveniently situated, and a staircase leading up to the foyer bar above, which was to be cut off and adapted to form a new bar for the stalls, boxes, and dress-circle.

The new vestibule is rectangular on plan, and occupies the space of the old vestibule and bar. The passage running round the back of the dress-circle was divided into three, the middle portion being given up to the new box-office, and the two end portions formed into small crush lobbies from which are the entrances to the stalls, boxes, and dress-circle

The new staircase rises from the space occupied by the serving space of the old bar, and returns up over the top of the stairs which lead from the street to the upper circle.

All the woodwork of the new vestibule is in waxed oak, the floor being laid in small squares and the walls panelled to a height of about 8 ft.

The style adopted is that of the Doric order, as this was considered the best and



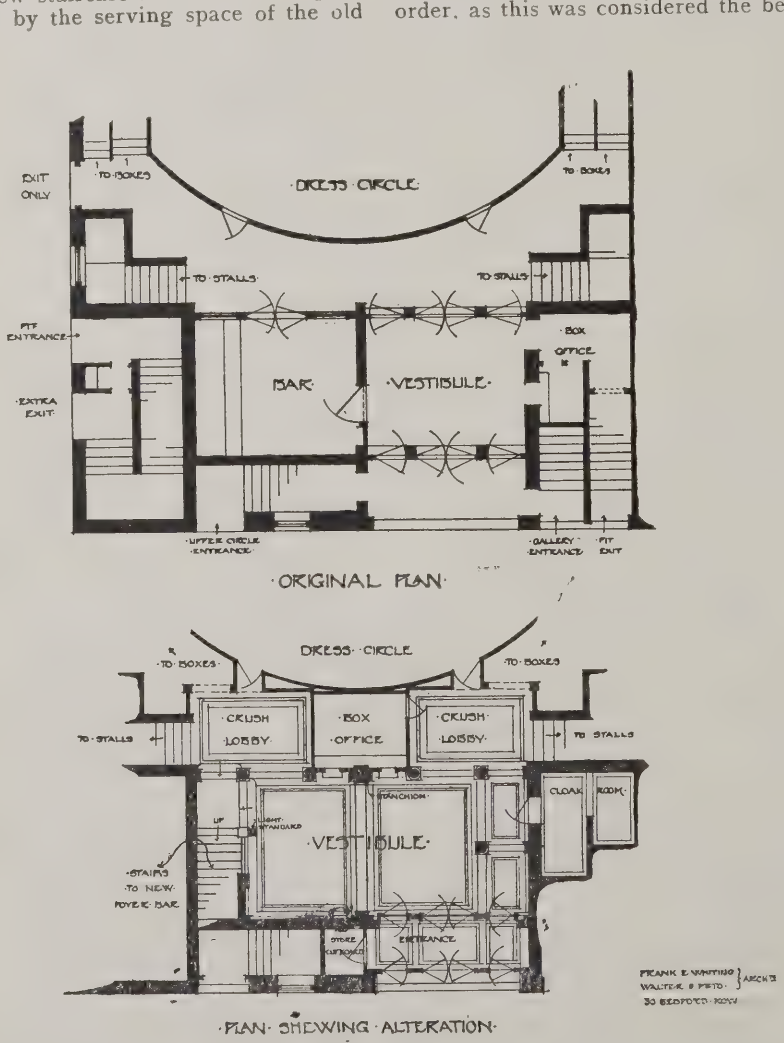
NEW VESTIBULE AT THE COMEDY THEATRE. WHITING AND PETO, ARCHITECTS.

most suitable in dealing with the vario
levels of the ceilings. The columns a
pilasters are of grey scagliola marble, wi
antique brass caps and bases.

The lighting of the vestibule is th
known as concealed lighting, the wh
space being flooded with a soft, ev
light almost like sunlight. The new b
for the stalls and dress-circle is carri
out in the Ionic order, the details bei
French in character. The walls a
made out in panels, with an ornamen
feature behind the bar. The whole of t
bar is of marble, and the room is de
rated in white and grey, with gilt elect
fittings.

The stairs leading to the bar contin
up to the gentlemen's new lavatories. T
old gallery bar has been demolished, a
in its place a new bar for the up
circle has been arranged, the gallery
being re-arranged in another position le
ing off the gallery. All the lavator
have been re-modelled, and the whole
the interior re-decorated, including
and comfortable stalls. The whole
the exterior has been re-painted.

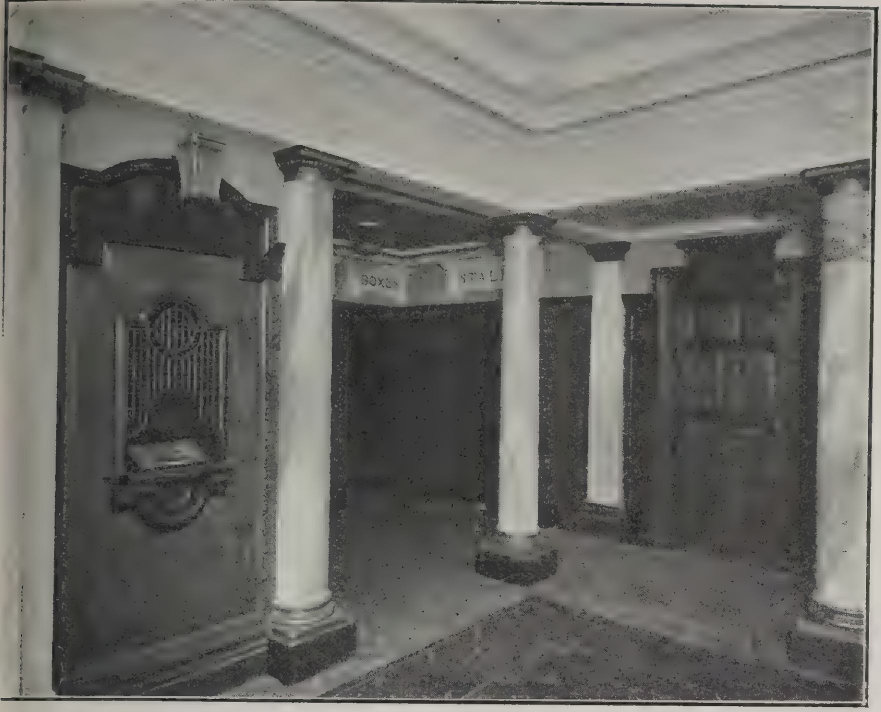
Messrs. Frank E. Whiting and Wal
S. Peto, of 30, Bedford Row, were
architects; Messrs. Battlev, Sons
Holness the contractors.



ALTERATIONS AT THE COMEDY THEATRE, PANTON STREET, LONDON, W.

WATER SUPPLY FOR TRADE A FOR DOMESTIC PURPOSES.

In the House of Lords on Novembe
the Lord Chancellor, Lord Atkinson, L
Shaw of Dunfermline, and Lord Mer
heard the appeal of Colley's Patents, L
v. Metropolitan Water Board. The
peal was from the order of the Cour
Appeal (Lords Justices Farwell and K
nedy, Lord Justice Vaughan Williams
senting), on February 24th of the pre
year, reversing the orders of
Divisional Court (Justices Phillimore
Coleridge) and of the Middlesex Cou
Court judge. The Water Board
taken to the County Court a demand
£21 4s. for four quarters' water
Messrs. Colley had tendered £8 4s.
The former sum was calculated on su
for domestic purposes, the latter on su
for use in trade, business, or manufac



NEW VESTIBULE AT THE COMEDY THEATRE WHITING AND PETO, ARCHITECTS.

only question in dispute was as to ch basis the Board were entitled to rge upon. The County Court judge had ided in favour of the lower basis, and Divisional Court agreed with him. The irt of Appeal, however, had reversed judgment of the Divisional Court. ice the present appeal by Messrs. ley. The Lord Chancellor, in delivering his judgment, said that the question whether, when a factory was equipped lavatories, w.c.'s, and so forth, for use of the workpeople, was the supply vater for domestic purposes, or was it trade purposes? He thought that sec- 25 of the Metropolitan Water Board arges) Act, 1907, meant that the supply sanitary conveniences, etc., of the di- sions there specified was always to be ted as a supply for domestic purposes. t ended the case, and the appeal ed. Lord Atkinson and Lord Mersey urred, and Lord Shaw delivered a ment to similar effect.

OBITUARY.

M. Edouard Andre.

ie death was announced last week of Edouard François André, who was of the most eminent landscape gar- rs of modern times, and had a large e of friends in this country, where are many examples of his taste. André was born at Bourges (Cher) on 17th, 1840, was educated at the ıral History Museum of Paris, and ed into the "Services des Promenades antations" of the city of Paris, under direction of Alphand. His works in- the Parc des Buttes-Chaumont, s, as well as public and private parks gardens in England, France, Hol- Russia, Italy, Uruguay, Monte o, and elsewhere. M. André was a ber of the jurv of the International icultural Exhibition held in St. sburg in 1870, and was the author any books.

"THE TRUE HOPE OF ARCHITECTURE."*

BY J. B. FULTON, A.R.I.B.A.

My definition of the thesis is that architecture means plan, section, and elevation, the elevation being as the flower of the stalk, and modern work meaning contemporary buildings designed to supply the wants of modern life, showing a complete and masterly knowledge of all previous building in architectural history; true hope meaning that our efforts shall be crowned with success, and that our knowledge and study will give to the world buildings perfect in plan, section, and elevation.

The Study of Architecture.

The study of architecture must be on definite broad and simple lines. If life will allow you, surround yourself with the most beautiful things of this world. Let every sense be educated and fed daily, and let your ideal be so high that it will not be satisfied with anything old, but only with that which you will produce, because the true hope of architecture lies in the study of good modern work, the appreciation of everything good and beautiful in the architectural world through the medium of our own generation, and your own individual mind.

Education and Training.

Education is necessary; and in the near future architectural education will become practical, based on the study of good modern work. For example, we will have models of the best examples in plan, section, and elevation, and lecture on the comparative merits, with diagrams giving laws in composition.

Academical training to an architect is of little or no use in this country, where the greatness of our country is only recognised in the daily Press in our naval architecture. We must inspire our fellow-countrymen with great ambitions, and even in the smallest cottage to realise that it must show the greatness and be for the further glory of our great Empire. This thought may appeal to many as being local, and this might be compared to the world's unity in architecture; but everything must be local before it can be universal. For example, llok at the architecture of the United States of America. We know that the architects have been educated so that self-consciousness is lost, and they are inspired in design with the knowledge that it must be worthy of a great nation; with the result that we must go to their country now to further our education; which, I hope, will never be complete—at least in our own estimation.

This is a great thought and a helpful one in architectural education, to realise fully that we are part of the greatest Empire the world has even known, and it is merely a humbling thought to know that our architecture is unworthy.

The education we receive in this country is varied; the office being the best, combined with evening class work. We have a few teachers who inspire with enthusiasm, but, generally, architecture is badly taught. Ninety-nine students out of a hundred, in measuring or sketching a building, only see it in part, and make a study of the part that appeals to them most. A much better method of study would be at least to make a sketch plan, noting all points of structure, and afterwards mastering the sections and elevations.

All-round Culture.

To forward the study of architecture, in which truth and hope will lead us on to a fuller knowledge, we must educate our taste generally. We must have a knowledge of painting, sculpture, music, literature, etc.; and some of our schools are really helpful in these matters; but nothing will assist us like travel; to see and study the best the workers of the world have produced. Then we must be above fashion, and work on until we satisfy our ideal. If we desire to better modern architecture, we must look at our studies from an entirely new point of view, remembering that architecture is not only an art but a science; and we must combine the two.

Enthusiasm.

In religion, in politics, in painting, music, sculpture, etc., we see students so enthusiastic that they carry us with them in their own views. In the study of architecture we seldom come across enthusiasm. This is to be deplored. Momentary enthusiasm is of no real value; it must be continual. We must be business men; and yet at the same time our being must be filled with zeal for the noblest and greatest in all arts. Can painting and sculpture vie with architecture in magnificence, majesty, and splendour, or in usefulness and interest? Can the stones and trees compare or compete with the beauty of a landscape in its general composition? We must be fully convinced that our art, our profession, is the greatest and the most responsible in the world. Our work cannot be hidden, it is everywhere evident, to influence, refine and enoble the millions.

Criticism.

The art of criticism must also be studied, as reckless and unstudied criticism is wicked. It is necessary for the architect to be able to analyse and reason, but before this can be done effectively we must agree to many rules and laws which have not yet taken form in our system of education. In modern planning, for example, we have now a general recognised rule that you should be able to go from one department in a building to another without passing through the other. As to elevations, it would appear that systematised study in design is possible and practical. Nothing is more hurtful to a student than to be told that we have absolutely no law, or order, except in the study of the five classic Orders, and in school planning. Criticism with comparative and logical reasoning is an excellent stimulant, and these are qualities that are appreciated in, for example, Mr. H. H. Statham's criticism. No matter how bad a building or design may be, there will always be points worthy of note and remembrance. If we cannot give a reason for our dislikes we should not give them utterance, and the critic should be prepared with a better solution than that which he condemns.

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*Condensed from a paper read before the Architectural Association, November 13th, on the thesis "That the True Hope of Architecture lies in the Study of Good Modern Work."

Draughtsmanship.

We should be first-class draughtsmen as well as good business men. From a practical point of view, line drawing is very necessary, as a builder cannot work from shaded drawings. Certainly we must design in light and shade, but true outline drawing is much more difficult than drawing in light and shade; although more mechanical, it must be true. To get the best results it is necessary to enjoy the work quite as much as the artist enjoys making his picture. The mastery of Perspective drawing is necessary because in design we must be able to think in perspective.

Books.

If at all possible, surround yourselves with the best books published in all countries; or go once a week at least to feel the tremendously edifying influence of some great library. Study all our weekly and monthly architectural papers, British and foreign. From our weekly architectural magazines there is much to be learnt about contemporary architecture

Nature.

We should be able to appreciate nature in all her moods. This study will help us in our search after proportion, sense of form, light and shade, and there is a nameless something we can receive from a pathless wood on a lovely spring morning or in an autumn evening; while the storm and peace of the sea, the majesty of the mountains, the ever-changing beauty of the sky, and the loveliness of detail in nature, are all profitable in their impressiveness.

Imagination.

While our education must, on the purely practical side, include the study of science, of construction, the knowledge of all trades, etc., the complete and technical treatment of heating, lighting, ventilation and drainage, we must also study drawing from the antique, from the life, from nature, and from buildings. Architectural history and architectural design may not be neglected; but we must also find time for the study of architecture from a purely imaginative standpoint. I would suggest that we should have time studies (say, two hours) of a finished sketch of some inspiring monument. We seem to be limited in our ideas as regards the grouping and massing of architectural composition. In this country the plan is better understood than the elevation. We should therefore find some method of attaining greater freedom and great perfection in composition.

Decoration.

The architect should have a thorough knowledge of the decorative quality of design and colour. We must not think of decoration as a separate art. It is architecture, and is therefore only the refined detail of the plan, section and elevation, and the whole should be completed by the same master mind. To help us in the decorative quality of our work we should not only study good actual work, but should also be able to see landscapes, streets, flowers, etc., as decoration.

Where and What to Study.

In addition to studying in the best offices and in the best schools in our own country, we should continue our studies in Paris, Vienna, Rome, Athens, Constantinople, New York, etc., in order to learn principally what they can teach us in the grouping of masses, detail, composition generally, and the history of architecture, etc.

It is useful also to study biography, and to be influenced by the lives as well as the works of the great architects of all ages. Inspiration often comes of labour and study. Here knowledge is power. The Fine Art Palace built in Paris (1900) is the modern building that has most markedly influenced architecture in America and in our own country. In our huge capital we have many buildings worthy of study. Many of our schools, town halls, libraries, etc., are excellent in plan and elevation.

In his preface to his work on "Modern Architecture," Mr. H. H. Statham writes: "The main object of the first chapter on 'The Present Position' is to offer an answer to the views propounded by a section of architects and architectural critics of the day who wish to regard architecture as a purely ideal art, dissociated from the practical considerations which the conditions of modern life, as it appears to me, inexorably impose upon the architect; to look only at one side of the work of the architect and turn their back on the other, the more prosaic, and practical side; a position which appears to me to be entirely untenable."

The plan of a modern building, under the influence of civilisation, has become an exceedingly difficult and complex problem. The necessary relations between plan and design, so evident in a temple or a cathedral, must not be lost, but only adapted, as we carry forward the tradition in good modern work.

New Work and Old.

In the study of modern buildings we must approach the new in exactly the same spirit as we studied the old work. In the study of old buildings we take the building on its own merit, but with modern buildings we criticise the architect more than the architecture; and for true study this is against the thought that the "True hope of architecture lies in the study of good modern work." I would suggest that we study all the best examples of ancient architecture, and all the finest examples of modern work, before we add our own individual thoughts and knowledge to the history of architecture.

We know the conditions and requirements of the building. The plan designed in accordance with the best modern examples suggests certain features similar to some well-known building. This accordingly, we measure and study, and gradually our design grows. It is thus based on tradition, good taste, and modern requirements It is said that we can have a bad plan with good elevations, and vice-versa. I would rather say that a building bad in plan is bad in elevation, and vice-versa. To attain originality we must study, as we have already noted, everything the world can teach us, and then at the right moment add our knowledge. If we ha
succeeded in our studies and are enthu
astic, let our education be so compl
that we are able to add dignity; becau
without dignity, design is worthless.

CORRESPONDENCE.

The Editors disclaim all responsibility for statements made or opinions expressed correspondents.

Correspondents are asked to be brief, and write on one side of the paper only.

The Royal Institute and the Society Architects.

To the Editor of THE ARCHITECTS' A
BUILDERS' JOURNAL.

SIR,—There appears to be some n
understanding amongst some of the me
bers of the Royal Institute in regard
that portion of the Society's annual
port in which it is stated that the Cour
of the Royal Institute propose to make
application to the Privy Council fo
supplemental charter in order to g
them the necessary powers to enter i
the agreement..

It did not occur to my Council, in dr
ing their annual report, that any am
fication or explanation of the forego
statement of fact was necessary, as it
not anticipated that the members of
Royal Institute, or any one else, wo
not realise the obvious fact that any p
posals which may be agreed upon betw
the Councils of the Royal Institute and
Society must in each case be subject to
consideration and approval of the gen
body of the members before any f
settlement can be arrived at.

I have not had an opportunity of c
sulting my Council on the matter, bu
am sure they would be extremely sorr
think that any misunderstanding on
question could possibly arise. Will
therefore kindly allow me to make it
fectly clear that proposals for a
charter and by-laws are being conside
by the Council of the Royal Institute
a view to laying them before the gen
body, and that they will also, in
course, be laid before the general bod
the Society.

C. MCARTHUR BUTLER,
Secretary of the Society of Archite
28, Bedford Square, London, W.C.

The Plane and the Adze.

To the Editor of THE ARCHITECTS'
BUILDERS' JOURNAL.

SIR,—I notice in your issue of the
inst. an article on an essay in flat
nishing, in which the statement is m
that the dining room is covered
"genuine Elizabethan panelling, a
good specimen of workmanship of
period.

"The work is entirely hand wrou
the panels show the marks of the
tool, the work having been exec
before the advent of the plane."

It is with some degree of astonish
that I read a statement such as
appearing in your usually well-infor
journal.

Leaving aside the fact that iron pl
were used by the Romans in Britain
will come to the constructional evid
of the plane being used in the produ
of panelling. First, I would like to
by what method (except by the p
such long, straight surfaces, such as
stiles and rails, could be wrought
sufficient truth to enable their
worked into panelling?

condly, by what method the groove h holds the panels was worked, if by the plough, which was, and is, r more complicated tool than the e that would be used for working ls?

udents of the work of the past are to recognise in the wrought surfaces he wood-work at the Elizabethan d, and earlier, the evidence of the use e plane.

ERNEST R. GRIBBLE.

[Before the advent of the plane" is inly a loose expression, which some- escaped revision. It is nevertheless antially true that until the plane was ght to its present state of perfection, d by no means superseded the adze; h tool, indeed, is even yet not quite lete; and, as a student of woodwork, correspondent must be well aware of recision and versatility in dexterous s.]

aryta Process for Decayed Stone.

,—In your notice of the retirement ir Arthur Church from the Chair of nistry at the Royal Academy, you ion some famous buildings the work of which has been treated with ta water. It may perhaps be of est to add that H.M. Office of Works cted some of the masonry at Hamp- Court Palace to this treatment ex- nentally in 1909. The result proved atisfactory that a very considerable int of the stonework of this most in- ting building has been treated with ta solution during the past summer.

HAROLD E. CHURCH, A.R.I.B.A.

ILDERS' FOREMEN'S PENSION FUND.

e make this week a final appeal on lf of the Pension Fund of the lers' Foremen's Association. The lence of the object has already been efore our readers, and we have been led, through their generosity, to get her a sum of £20 in support of this ion Fund. We should like, however, e closing the list, to see the sum in- ed, and we therefore hope that last appeal will meet with a good nse. The donations received up to resent are as follows:—

rietors of the Architects' d Builders' Journal	£5	0	0
nens and Carter	2	8	0
nded Metal Company, Ltd.	2	2	0
sed Concrete Steel Co. Ltd.	2	2	0
d Whitehead (Leeds) ...	1	1	0
Ruberoid Co., Ltd. ...	1	1	0
1. Callender and Co., Ltd.	1	1	0
. ...	1	1	0
Bros.	1	1	0
nas Faldo and Co., Ltd. ...	1	1	0
nted Bar and Concrete gineering Co.	1	1	0
y and Co.	1	1	0

New System of Reinforced Concrete Underpinning."

ith reference to the article on this ct which appeared at p. 498 of last 's issue, Mr. C. R. Price, the in- or, 87, Bishopsgate, E.C., informs us he is being overwhelmed with en- es, with which, however, he is deal- vith the utmost possible promptitude, e order in which they are received. oints out that the two illustrations we would have been in more strictly al sequence if their positions had reversed, as the first phase was n in the second illustration.

STONE SLATING.

BY HAROLD E. HENDERSON.

Stone slating (or tiling as it is sometimes called) has not received that recognition from architects which the material seems to deserve. Probably this is because of economic reasons, the extra cost owing to the roof timbers being of larger scantling, and the cost of carriage of the slates themselves. Yet there is no other roofing material so logical as the use of stone slates to cover a stone building. Such a covering fulfils perfectly all æsthetic and utilitarian requirements, it weathers to beautiful tints, and vegetates in places to mellow ochres and golden brown. It satisfies the eye with its thick and rough edges, and obtains the comfortable result of a warm roof in winter and a cool roof in summer.

There is a considerable difference in the size and thickness of the slates of the different building districts, those of Yorkshire and Lancashire varying a good deal from the slates of Gloucestershire, Northants, and the villages of the Cotswolds.

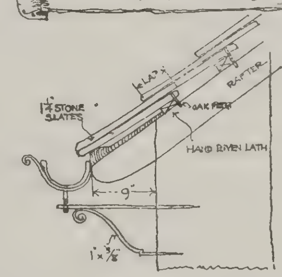
The slates of the sandstone districts are always larger and thicker than those of the limestone areas, and probably in the south-west of Yorkshire and in the towns and villages at the foot of the hills dividing Yorkshire from Lancashire are to be found the largest slates in the country.

There are various methods of quarrying the slates, each method being adapted to the geological composition of the material. Where the rock laminates freely, as at Colleyweston, in Northants, and in some of the Yorkshire sandstone slates, the material is taken out of the quarry in pieces of from three inches to fifteen inches in depth, and laid out in the open, and the winter frosts swell the moisture in the material; and when the thaw sets in a few blows of the hammer separate the rock into slates of various sizes and thicknesses

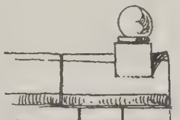
When the rock does not separate so easily as described above, the layers are cleaved with the hammer and chisel, or flat-headed pick, and the denser material is laid on the ground with the cleaving edge uppermost, and riven by means of wide-bladed chisels or wedges driven in with smart blows of the hammer.

The latter type of slate, termed "hand-riven," has a much rougher face, and approaches nearer the natural stone slates which are obtained from the moors, and which form to a great extent the covering of the homesteads of the Yorkshire dales. The pitch of the roofs varies according to the size of the slates; some of the stone-slated roofs in Northants and Gloucestershire are as much as fifty-five degrees down to forty-five, and those of Yorkshire and Lancashire vary from forty-five degrees to as low as twenty-two degrees.

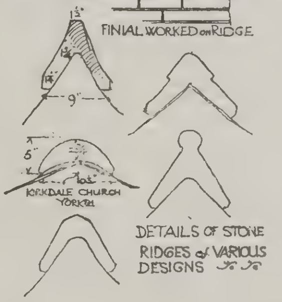
STONE SLATING
Harold. E. Henderson. Oct. 1911.



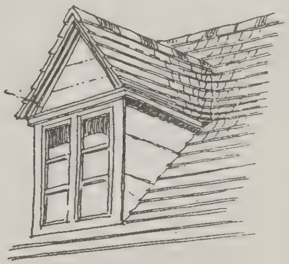
STONE SLATED EAVES.



FINIAL WORKED on RIDGE

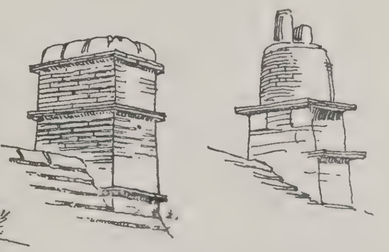


DETAILS OF STONE RIDGES of VARIOUS DESIGNS

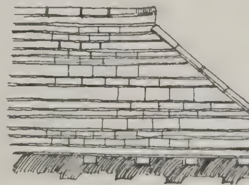


STONE SLATED DORMER from PONTEFRACT showing Valley of Roof Swept in a Curve.

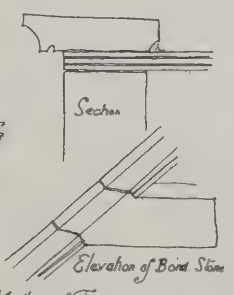
A YORKSHIRE COTTAGE Showing use of Stone Slates for Roof, Chimney Caps, Strings, Chy; Weatherings, Throughs Etc. Walls of Stone Whitewashed.



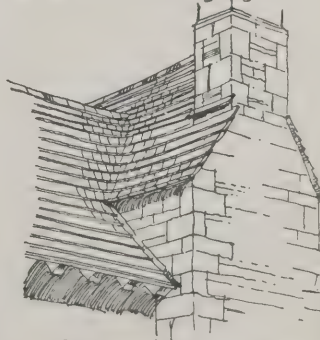
CHIMNEY STACKS, BUILT of RUBBLE STONE and Thick Stone Slates with Rough Edges.



Roof at Osbaldwick Nr York Showing variation in courses of Slates



Method of Tying down Slates at Gables, from Finghall Church



Sketch showing Swept Valley Etc

Stone slates are hung by means of oak on deal pegs to laths or battens, and some have the additional security of copper or galvanised iron nails. The modern battens are nearly always sawn, but the old ones were of hand-riven oak, and gave a slight irregularity to the finished slating, which is one of its charms.

It was the winter night occupation of the old slater to cut the pegs to hang his slates with. They were made out of oak, hazel, or willow, but an old elder stump was the delight of the peg-maker, as it was supposed to make the best and most durable pegs. When the stone-slated roofs of Padside Hall, near Dacre, in Yorkshire, were repaired, it was found that the slates had been hung with the small rib-bones of sheep instead of the wooden pegs. Stone slates are often laid dry, or with just a fillet of haired mortar at the head of the slate, and pointed on the underside.

The joints of the old slate roofs were pointed with a species of moss obtained from the waste land bogs; this was well padded into the joints and under the head of the slates, and in a short time the moss developed and filled all interstices—a much better way than the modern method of pointing in lime, which works loose very quickly, even when well incorporated with hair.

One often finds in old deeds the word "mosser" used in connection with stone-slated roofs; and in the churchwardens' accounts for Kirby church in A.D. 1761 there is an item for "mossing and putting up slates, etc., £2 2 shillings."

The method of laying the slates is shown in the accompanying illustrations. They graduate in size and thickness from the eaves to the ridge, where the smallest and thinnest are placed. Verges should be slightly tilted upwards to throw the rain water back on to the roof, and the same applies where the roof meets vertical faces such as gables and chimney stacks. The slates should project over the gables at least 2½ in., and should have a collaring underneath of well-haired mortar. Ridges are finished ridge stones of simple section, well bedded and jointed in haired mortar, and butt jointed, the end stones being slightly tilted and sometimes having a finial worked upon them (see detail).

Owing to the difficulty and expense of procuring lead, the old builders did without it; and where valleys occur, they swept the slates round in a wide curve without any line of demarcation, as shown in the sketch of the dormer window from Pontefract. Where the slates were too large to allow of this being done, a stone gutter was formed by using a saddle-back ridge stone turned upside down; and where the slates met vertical faces, they were tucked into grooves cut in the stonework and pointed. Gutters behind parapets were formed in stone with gargoyle outlets. In districts where stone slates are easy to obtain, numerous are the uses to which they are put. The sketch of a moorland cottage at Dent, in North Yorkshire, is slated with natural slates collected from the moors, and roughly dressed slates are also used as "throughs" to bond the rough rubble stone walls, and are also used in the same cottage for the projecting strings over the windows and doors, for the chimney weatherings and caps.

Sometimes the whole of the chimney stacks are constructed of stone-slates as shown in the illustration, with projecting weatherings and caps.

THE ARCHITECT'S FIRST CLIENT.

The Americans, being an intensely businesslike people, do not disdain humour. They even admit it, in heroic doses, to the pages of that highly respectable magazine, "The Architectural Record." In the November issue of that publication there is a very funny story entitled "The Client," by Ellis Parker Butler, which gives a delightfully whimsical description of a young architect's first encounter with a client. As a result of this experience, he is found humped down before a tin table in a corner café in the Latin Quarter, when it was supposed by the friend who discovered him that he was "architecturing on his own account at Montclair, New Jersey."

When his friend suddenly slapped him on the back, the architect was greatly scared. He was afraid it was *She*—his first client, youngish and blondish. "I had to leave. I had to run away. I was breaking down under the strain of her."

It was terrible to find him such an awful wreck. It seems he finished his course at the *Bozark* (French for Fine Arts, you know) and stood right up among the top of the young fellows and left with glory. Somebody had complimented him most highly on something — the plan of a two-storey peristyle for a naval observatory for observing the perihelia of aeroplanes, or some other useful thing like that. Then he set up in Montclair as an architect, with offices in a yellow pressed brick building. The architecture of this building depressed him from the very first. Someone had put the ready-made tin cornice on upside down. Quite a natural mistake, but it annoyed him. For weeks at a time he had nothing to do but sit in his office and think about the row of *floor de liss* (French for iris) upside down above his head.

Then for months and months his office routine was as follows:—He would sit until noon thinking of forty-million-dollar Gothic cathedrals and ten-million-dollar city halls. After luncheon he would think of plain ordinary Queen Anne cottages until three o'clock—ten-thousand-dollar cottages immediately after luncheon, but, by three o'clock, two-thousand-dollar cottages. Just after three he began to think of woodsheds and additions to chicken-houses, the scale diminishing until four o'clock, when he arrived at thought of the upside-down cornice. This was something of a dip from the cathedral and town-hall commissions; for if he changed the cornice to suit his taste he would have to draw the plans for nothing and then pay for the work of flopping the cornice over.

Fritz had begun to think-out lunatic asylum interiors when his first first client arrived. She wanted a house. She wanted something Queen Annish—something like a house she saw in Brookline, and something like another in Columbus. There were to be a pergola and a garage. She wanted dear old-fashioned small windows, but they must have large plate-glass panes. You can never keep maids if they have the corners of many small panes to clean.

When you meet a woman of that sort, look at her feet. If she wears high-heeled shoes, you want to talk Louis XV., and "How would lavender satin wall coverings do for the boodwarr?" If she h
common-sense heels, it is only necessary
say: "In my opinion a dwelling is inco
plete without eighty-four large cloth
closets." This woman had common-sen
heels. Fritz got on the right track wi
the clothes-closet saying. But She h
brought her own plans with her. Th
were not nicely scaled. A room 12 by
and a closet 4 by 6 would be put down si
by side, each occupying the same siz
space on the plan.

Fritz managed to please with his
draft of the first-floor plan, but with t
second-floor plan she was displeased, a
Fritz had to explain that if he started t
stairs where they did start on the fi
floor plan, and let them arrive where h
client wished them to arrive, they wou
have to get under the bath-room someho
and the only way to do that would be
have the bathroom suspended from t
house-roof by means of chains. She sai
"If I want the stairs in a certain place
want them there. Please understand tha
So he went back and altered the seco
floor, and then altered the first floor
agree with it. She was delighted with t
second floor, but when she saw that t
first floor had been revised, she said s
liked the original first-floor plan mu
better, and the revised plan would not
at all.

"But," said Fritz, "you can't have th
first-floor arrangement with this secon
floor arrangement. For example, t
chimney in the dining-room is on the l
side of the house in the first floor plan y
like, but it is on the right side of the hou
in the second-floor plan you like. N
the chimney would have to rise one stor
and then cross the house between the ce
ing and the floor and go on up."

"Well, what of that? Suppose it doe
You are an architect. You ought to
able to fix that some way."

Fritz wrestled with the plans, but t
more he worked at them the greater
confusion. He had chimneys and fl
running all over the place. . . And
plumbing! There were places where
pipe had to go around the stairway, a
after entering a room, back out again,
if it had made a bad mistake, run
length of the house, and end where th
was no room and no house. There w
some first-floor rooms without roofs, a
some second-floor rooms that had to fl
in the air. She said the plans would
do at all. She wanted that first-floor p
as it was at first, and she wanted also
unrelated second-floor plan.

Finding that his mind was giving w
Fritz let her have what she wanted.
approved, and wrote him a cheque. Th
he fled to Paris, a haunted man. "Wh
that builder," he said to his friend, "fir
that kitchen chimney doesn't meet
upper section of itself by three feet,
going to be very, very angry. When
finds that the bath-room has to be hu
from the roof, and that the water will ha
to be hung from it through rubber ho
I'm ruined. That's all. I'm ruined.

But the friend was able to tell him th
the house was built, and She was hap
and contented in it.

"Didn't she—didn't she say any thi
cruel?" Fritz asked, hope beginning
shine in his eyes.

"Not a word—or yes! Yes!" I sa
"I remember now! She did. She sa
—let me see, what was it? Yes!
said the builder she had was almost an
solute idiot. She said he was a stu

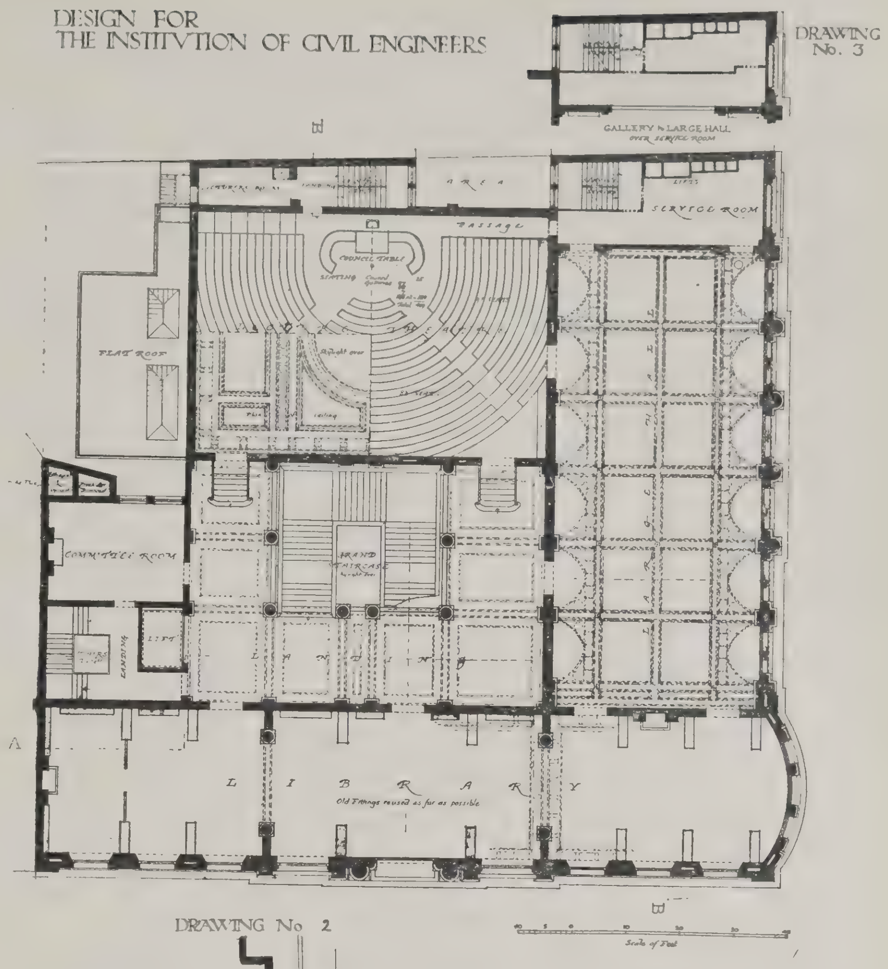
c. That is what she said. She said she ave him as clean and plain a set of plans ; ever were drawn, and he took them, nd the very first thing he did when he ad them was to sit down and look them ver and begin to cry like a baby. She said e knew right then she had made a mis-ke in picking her builder, and it turned it that she was right. Every time he oked at the plans he seemed to have an tack of insanity. She said he would ok at the first-floor plan, and then at the cond-floor plan, and then go down to e corner and get behind a tree and ear. But she said she held him to his ork. She said he would come to her like child and complain that something was ong with the plans—that something e demanded absolutely could not be ne. Then, she said, she told him 'Nonnse!' and he went back to his work and d whatever it was just as she wanted it. Fritz turned up the rim of his slouch t.

"Let's get in out of this rain," he said, d moved back under the shelter. He ok off his rain coat, and gave his mousches a dainty twist.

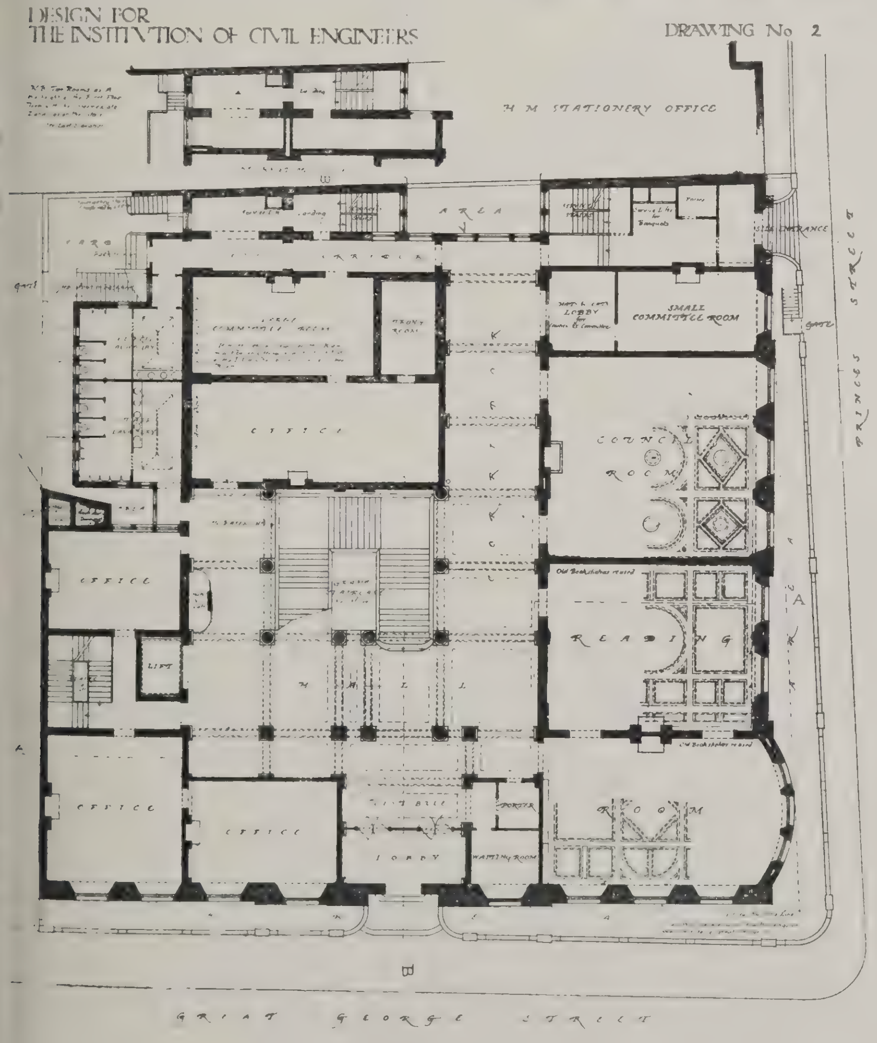
"Stupid lot, those builders!" he said. Ruin half the work a good architect ans. Hey! *Gasson—doo bock!"*

OUR PLATE.

We illustrate as the centre plate in this ue Sir William Emerson's competitive sign for the new building of the Institution of Civil Engineers in Great George Street, Westminster. The site of the existing premises having become necessary for the completion of Brydon's Local Government Board Offices, in Whitehall, a competition for a new building was promoted, in which the successful architect was Mr. James Miller, whose design is now being carried out on a site acquired by the Institution on the opposite side of Great George Street. Our reproduction is from Sir William Emerson's own perspective drawing, which was exhibited at this year's Academy.



FIRST FLOOR PLAN



GROUND PLAN .

SIR WILLIAM EMERSON, F.R.I.B.A. ARCHITECT.

New Drill Hall for Paisley.

The War Office has authorised the erection of new headquarters buildings for the Renfrewshire Fortress Works Company of Territorials at Paisley Barracks. The architects appointed to prepare the plans of the new buildings are Messrs. J. Craig Barr and Cook, Gilmour Street, Paisley. On the ground floor of the executive building are placed the orderly room, armouries, quartermaster's store rooms, and recreation rooms and lavatories for non-commissioned officers and men, while separate entrances are provided for the officers, instructors, and the rank and file. On the upper floor of this block are situated the officers' quarters, lavatories, officers' mess room, and drill observation gallery, while apart is provided a convenient dwelling-house for the Royal Engineer Instructor in charge. A large drill and lecture hall and modelling unit will be erected on the south side of the main building, and adjacent will be placed large store sheds for spars, bridging and pontooning material, and the general paraphernalia of military engineering.

COMPETITIONS.

Australian Federal Capital Competition.

With reference to this competition, we published in last week's issue, at page 485, a letter from Mr. Arthur Wm. Anderson, hon. sec. of the Institute of Architects of New South Wales, stating that his Council had decided to ask members not to take part in this competition unless the conditions are made more satisfactory. We also received, too late for publication last week, the following notification from the R.I.B.A.: "Members and Licentiates of the Royal Institute of British Architects are requested not to take part in the above competition.—By order of the Council, IAN MACALISTER, Secretary."

Mr. Anderson, it will be remembered, stated that the Federal Government had refused to amend the conditions in the matter of the appointment of assessors, the final decision being left in the hands of the Minister alone.

New Schools, Blyth.

At a meeting of the Blyth Education Committee, held on November 8th, the designs submitted by Messrs. Fenwicke and Watson, Pearl Buildings, Newcastle-on-Tyne, in a limited competition for a new elementary school in Princess Louise Road, Blyth, to accommodate 1,200 children, were selected.

Architectural Hoardings.

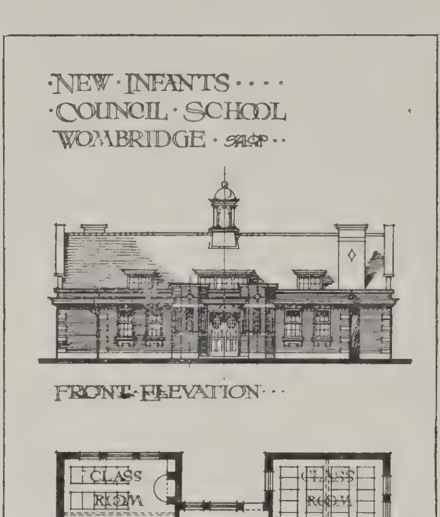
The result of the competition in which Mr. W. H. Lever offered prizes for architecturally constructed hoardings, has been announced as follows: £50, Redhill, Reigate, and District Billposting Company; £25, Coventry Billposting Company; £15, William Booty, Ltd.; £10, Rochdale Billposting Company. Mr. Leonard Stokes, P.R.I.B.A., was assessor.

Head Offices for the Port of London Authority.

The Port of London Authority invite architects to submit preliminary sketch designs in competition for new Head Offices proposed to be erected on a site in Trinity Square, and for the laying out of the remainder of the land as a building site. From the sketches submitted the authors of not more than six designs will be selected to submit designs in a final competition, at an honorarium of 200 guineas each, the Authority reserving to themselves the right on the advice of their assessor to invite not more than six other architects to send designs in the final competition. The assessor appointed is Sir Aston Webb, R.A. Conditions of the competition, with full particulars of the accommodation required, plan of the site, and photographs of the adjoining buildings can be obtained on application to the secretary, Port of London Authority, Mr. F. Ayliffe, 109, Leadenhall Street. E.C., on payment of the sum of £1 1s., which sum will be refunded on receipt of a bona fide design or on the return of the particulars within three weeks.

LIST OF COMPETITIONS OPEN.

NOVEMBER 17. BAPTIST CHURCH, ETC., NOTTINGHAM.—For this competition, which is limited to Nottingham architects, particulars may be had from Messrs. Rorke and Jackson, Solicitors, King Street, Nottingham. Mr. H. W. Wills, A.R.I.B.A., is the assessor.



DICKENS-LEWIS AND HAYMES, ARCHITECTS.

NOVEMBER 30. TECHNICAL INSTITUTE, CARDIFF.—The Cardiff Education Committee invite architects to submit competitive designs and estimates for a technical institute to be erected in Cathays Park, Cardiff. Mr. J. S. Gibson, F.R.I.B.A., has been appointed assessor. Full particulars may be obtained from John J. Jackson, Director of Education, Educational Offices, City Hall, Cardiff, on deposit of £2 2s.

NOVEMBER 30. HOSPITAL, HASTINGS.—The Joint Committee of the East Sussex Hospital and the King Edward VII. Memorial Fund invite architects to submit competitive designs, etc., for the proposed new hospital. Mr. Edwin T. Hall, F.R.I.B.A., of 54, Bedford Square, London, has been appointed assessor. Conditions and instructions may be obtained from Mr. W. M. Rhodes, East Sussex Hospital, Hastings, on deposit of £1 1s. Premiums of £125, £75, and £50 are offered.

DECEMBER 30. WORKMEN'S DWELLINGS.—At the Eisteddfod, 1912, a prize of £50 will be offered for designs for workmen's dwellings. Apply to Welsh Housing Association, 9, Temple Chambers, E.C.

JAN. 1, 1911. INFIRMARY EXTENSION, ROCHDALE.—The Board of Management of the Rochdale Infirmary invite architects practising in Rochdale prior to January 1st, 1911, to submit plans, designs, and estimates for extending the present buildings. Conditions of competition and instructions to architects, together with other information can be obtained on application to T. Elvyn Kershaw, Secretary, the Infirmary, Rochdale. Mr. Alexander Graham, F.R.I.B.A., has been appointed assessor.

JANUARY 6, 1912. PUBLIC LIBRARY, STAFFORD.—The actual building is not to cost more than £4,000. Enquiries must be sent to the Town Clerk, Stafford, not later than November 25, and designs mu be sent in by January 6. Author design placed first may be appointe architect of the work; the author of th design placed second to receive fort guineas. Mr. Henry T. Hare, F.R.I.B.A. is assessor.

JANUARY 20, 1912. STATUE AT HAVANA —Competition instituted by the Cuba Government for the erection at Havana o an equestrian statue of the Cuban Genera Maceo. Plaster models should be sent b sculptors desirous of competing to th "Comisión Ejecutiva, Monumento a General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana before January 20. The sum of 100,00 pesos (about £20,600) has been voted fo the work. British sculptors proposing t compete should first put themselves int communication with the Commercial Intelligence Branch of the Board of Trade 73, Basinghall Street, E.C., where als further particulars (in Spanish) may b seen.

JANUARY 29, 1912. GOVERNMEN PALACE, MONTEVIDEO.—Designs are invited for a Government Palace and a tow improvement scheme. Premiums: For th former, £2,125, and £850; for the latter £1,060, £640. and £425. Conditions, etc. at the Board of Trade, 73, Basinghal Street, E.C.

JANUARY 31, 1912. FEDERAL CAPITA CITY, AUSTRALIA.—Competitive design are invited by the Commonwealth o Australia, for the laying-out of the Federa Capital City. Premiums are offered a follows: 1st, £1,750; 2nd, £750; 3rd, £50 Conditions, together with particulars plans, and instructions, may be obtaine at the office of the High Commissioner fo Australia, London. Designs must b delivered by January 31st, 1912, to Kin O'Malley, Minister of State for Hom Affairs, Commonwealth of Australia.

[The Institute of Architects of Ne South Wales and the R.I.B.A. have aske members and Licentiates not to take pa in this competition unless the condition are made more satisfactory. See our issu for November 8, p. 485, and note printe at head of this column.]

NEW COUNCIL SCHOOL, WOMBRIDGE, SALOP.

The plan consists of four class-room grouped around a marching corridor, ft. wide, with the cloak and staff room at the front. The elevation is simple b effective, being built with Randlay wir cut bricks, with white joints, relieved wit artificial stone supplied by the Steel Con crete Construction Co., of Great Malver Owing to the treacherous nature of th site, it was necessary to construct a rei forced concrete raft upon which th superstructure rests. The building wa erected by Mr. John Carver, of Welling ton, from the designs, and under th supervision of Messrs. Dickens-Lewis a Haymes, architects, of Shrewsbury. M G. H. Bailey acted as clerk of works

Gloucestershire Architectural Association.

A meeting of the Gloucestershire Arch tectural Association was held on Thur day last, at Cheltenham, the preside (Mr. Walter B. Wood) being in the chai Mr. William Jones, the librarian of th Cheltenham Municipal Library, and a honorary member of the Association, rea a paper on "A Talk upon Books on Arch tecture," which was illustrated by a co lection of architectural books from th municipal library.

MAGAZINES AND REVIEWS.

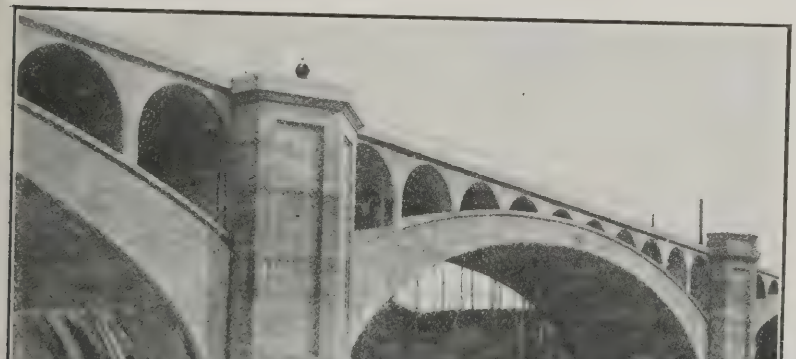
The "Burlington Magazine" starts with a short editorial on the question how to prevent the great masterpieces of art from being bought out of the country. The "Burlington" regards Lord Curzon's proposals, to increase the yearly grant to he National Gallery, and to invite members of Parliament to hand over their alaries to the National Art Collections Fund, as inadequate to the occasion, and proposes the following arrangement:—That a list of the masterpieces which England cannot afford to lose should immediately be made, and a sufficient capital um set aside for their purchase. "The eversion of the works on this list should e irrevocably secured to the nation at price to be fixed at once by confidential greement between the Government and he owners, which would be binding on oth parties in the future. This would ave the effect of nationalising the masterpieces as against a private purchaser, while the owners would still retain nd transmit to their heirs their property n them so long as they chose to do so." is an ingenious suggestion to reconcile he claims of the country with those of he private owners; but the question remains, will the owners of private collections be willing to enter into such a bargain? Unfortunately some of them have ready shown a disposition to resent any terference with their right to accept igh prices for their property when offered wealthy foreigners, and it is to be ared that some of them at least have ot enough patriotism to be willing to e their own hands in any way against he right to sell when it is to their obvious ofit to do so. The number contains ur illustrations of a remarkably interesting porphyry statue of Athena in e collection of the Duchess of Connaught, with an article on it by Sir Cecil ith, who concludes that it is an "echo" an Attic fourth-century type, executed mewhat towards the close of the first ntury A.D. The number contains some e illustrations from Limoges enamels the Salting collection.

The "Architectural Record" (New rk) starts with an article on the interest- subject of the old Spanish city of ledo, with a number of photographs, only of the well-known buildings, but some out-of-the-way picturesque corners, including an exceedingly characteristic one entitled "A Toledo Back-Yard." An amusing article on "The Client" will perhaps appeal to the humour of architects on both sides of the Atlantic. "New York Houses" shows a number of examples of street houses, some of them very good, mostly in what for want of a better word is called the Italian style; indeed, the house by Mr. J. G. Rogers, in Park Avenue, looks rather like a Pall Mall club; perhaps too much so for a private residence. In illustrating "a row of New York houses which would perfectly pass in a French city" we gather that the author of the article (Mr. Montgomery Schuyler) does not mean exactly to recommend this as a merit, but is rather of the opinion that there has been too much "Frenchification" in New York architecture. There are examples of quite another tendency; a house in pure Tudor style, by Mr. E. P. Casey; a very pleasing and simple brick front, by Mr. Grosvenor Atterbury; and a very well-balanced design for a high, narrow front, brick and stone, by Messrs. Albro and Lindeberg. A specimen of the ordinary brick house of the Harley Street type is sarcastically entitled "dwelling in decencies." The continuation of Mr. Sloan's article on the "Architectural Treatment of Concrete Buildings" is not very inspiring; the difficulties of obtaining anything like interesting detail are certainly not met in the author's sketch suggestions, which incline one to think that if nothing better than that can be proposed it were preferable to omit detail altogether. The concrete bridge over a river (an actual erection), of which we reproduce the illustration, is, however, somewhat effective, though the piers would have been better without the panelling, which is only a conventional detail unconnected with the structure.

"The Contemporary Review" contains an article by Mr. Henry Holiday with the title "Beauty in daily life: why has it disappeared throughout the civilised world?" He admits that his question may be held by some to assume too much; we think it does; there is a certain amount of beauty in daily life still, but some people are not inclined to recognise it unless it is exactly the kind of beauty they want, which means generally that it should take an archæological guise. However, of a general decay of beauty in daily life, and (what is worse) a general indifference to it, there can be no doubt; and Mr. Holiday suggests that the cause of it is "the system of buying cheap and selling dear, and living on the difference"; in other words, the influence of the middleman, whose policy it is to pay the artificer as little as possible, and sell his work for as much as possible. That is a new way of putting it, but it only amounts to the old complaint, that the public go to a person who deals in works of art instead of going to the people who make the works. This has been the parent of a great deal of bad art, as the actual craftsman has no inducement to do his best when he gets neither personal credit for his work nor adequate payment for it, and what would once have been an art becomes a trade. Among other remdies Mr. Holiday proposes that a kind of syndicate should be formed of those who will undertake to wear picturesque clothing in everyday life, just as there are picturesque dresses belonging to some academical and official bodies, who ought not, he thinks, to be allowed to have all the picturesque costumes to themselves. It is easy to propose such a movement, but it is hopeless to expect society at large to join in it; it would be thought pretentious and absurd, and that by many of those who are among the most sensible people. In regard to costumes we have to take life as we find it. In the Middle Ages and the Renaissance it was thought suitable to express your rank by the richness of your attire. Now it would be thought vulgar to do so; and no protests from artists will make the bulk of modern society think otherwise.

The "National Review" contains a strong article by Sir Arthur Griffith-Boscawen on "The crying need of Housing Reform." He points out (surely rightly) that when slum property is taken at a valuation, the valuation is based on rental, and the rents are swollen by overcrowding; "thus the slum owner is rewarded for doing that which is most detrimental to the community. Nothing, indeed, pays so well as to own a slum. The owner gets abnormally high rents so long as it exists, and he does as little in the way of repairs as possible, in the hope that his property will be condemned as an 'insanitary area,' and that then a beneficent local authority will come along and buy him out at a high figure." The best course, he thinks, would be to eliminate values based on rental altogether, and to value the site and structure separately, the latter at the cost of erection minus depreciation for its age and condition of disrepair. That would be a drastic and healthy remedy, but would it stand as legal? Having regard to the fact that many of the bad and dangerous characters in London are what their homes have made them, the author thinks that healthy homes are a vital necessity for the nation, and must be undertaken at once, whatever the cost. "Here," he adds, "is a policy for the Unionist party. Let them declare open war on the slums."

In the "Antiquary" Mr. Herbert M. White, commenting upon the extent to which Roman place-names in England seem to have been obliterated after the withdrawal of the Romans from their four centuries of rule here, has made a number of notes on places the names of which are either distantly derived from Roman words (ex. gr. *agger*, which appears in "Eggardun" and "Haggerston"), or which express in English some peculiarity which would belong to a Roman site. In many of these latter cases Roman remains have been found at or near the site named.



REINFORCED CONCRETE BRIDGE AT CARBONDALE, ILLS., U.S.A.

THE PRESIDENT OF THE R.I.B.A. ON ARCHITECTURAL TOPICS.

In the opening address, delivered by the President, Mr. Leonard Stokes, at the first general meeting of the Royal Institute of British Architects, on November 6th, Mr. Stokes said that since he had the honour of addressing the members of the Institute from the chair last year we had passed through all the glories of a Coronation, and, he added, "long may our beloved patron George V. live to wear the crown, placed upon his head amidst so much rejoicing, and surrounded by so much pomp and splendour!" Such an occasion naturally gives great opportunities to the architect and decorator. It is no doubt to be regretted that more use was not made of the services of architects; and that, when they were called in, their schemes were not more completely carried out. Nevertheless, the most effective, pleasing, and characteristic of the many great efforts to adorn our streets and buildings were those produced by architects. But instead of the "Gothic" annexe to the Abbey, one would have thought a fine marquee in gold and gorgeous colours surrounded by Venetian masts carrying flags, banners, and pennants much more suitable to the occasion.

The Processional Road.

The great processional road through St. James's Park is in itself a fine thing, but how it came about that it had no proper opening into Trafalgar Square is quite incomprehensible. A processional road starts from a palace, and leaves off, if you please, with a flourish of trumpets behind a row of houses which practically block its further progress. And when the houses have been dodged, further progress is effectually barred by an underground convenience! Mr. Stokes would have thought that the possibility of getting properly and effectively into Trafalgar Square would have been the first thing to consider; and it now looks practically impossible ever to make a really good finish towards the Square without spending a further huge sum of money, which might have been avoided if the scheme had been properly thought out from the first, by all three of the large public bodies really interested in the scheme, instead of by one alone, which one went to work apparently without any regard to the other two until the last moment, when, alas, it was too late. Architects are unfortunately too often forced, by the near-sighted policy of their employers, into designing incomplete schemes of this sort, and get all the blame for so doing, whereas they of course can only do as they are bid, on the land at their disposal. There really should be one authority responsible for the whole of London, and not several as at present. London with its seven millions of people is as important and probably as difficult to govern as many a European country; and instead of its City Corporation, its London County Council, and its two dozen or so of Borough Councils, with the Office of Works and the Woods and Forests thrown in, one would have thought that at least one Minister of the Crown—aided perhaps by a committee of experts—would have found work enough very profitably to engage his time, in looking after London, and seeing that its affairs were properly managed.

The Government of London.

Mr Waterhouse last session read a most interesting paper on this subject, but his suggestion of a Chief Architect acting with the architect from each Borough Council would probably cause friction and confusion, and Mr. Stokes would much prefer to take, say, H.M. First Commissioner of Works, and—after divesting him of many of the duties he now performs—make him responsible for the proper domestic government of London. He should, of course, have a good deal of power, and some knowledge and taste. There are, even from an architectural standpoint, grave reasons for some change. Having criticised the so-called "street improvements" at Piccadilly Circus, Shaftesbury Avenue, Charing Cross Road, Kingsway, Hyde Park Corner, and near the Albert Hall, Mr. Stokes declared that the mistakes he enumerated show that such work should not be left to amateur committees or corporations, driven this way and that, first by one consideration and then by another, but should be in the hands of, say, a Minister of the Crown, who should advise, control, and direct the various authorities now responsible for the government of London, and see that they worked together, and for the good of London as a whole, and that their various schemes and plans formed part of a comprehensive whole, arranged with due regard to the future.

Looking Ahead.

Surely some general scheme for the improvement and development of London in the future should be at once got out, and might be taken in hand by the suggested Minister. In Rome we were recently shown a plan which is to be carried out during the next twenty years, and all the property so required has been scheduled and the price fixed, and any improvements on it can only be made at the owner's risk, knowing that it may be wanted at any time during the next twenty years. We, however, do not appear to realise the importance of a comprehensive scheme, and the only people who do know, to some extent, that the public really likes well-laid-out and well-designed buildings are those who run exhibitions such as the White City. When will our corporations learn the same lesson, and realise the fact that there is money in it too?

The Corporation Bridges Bill.

Take a concrete example which has been exercising some of us a good deal lately—the Corporation of London Bridges Bill. This Bill was promoted by the Corporation of London and has now become an Act of Parliament, and provides for rebuilding Southwark Bridge, and for building a new bridge to be called St. Paul's Bridge close to it. Now we all know that the traffic in the City is already about as congested as it well can be, so what it will be like when fresh streams of traffic are created flowing to and from these two great new bridges, heaven only knows! It would seem a wiser policy to try rather to coax traffic away from the heart of the City instead of into it, particularly as the enormous cost of land tends very much to prevent improvements there being carried out on any very comprehensive scale. But the City has money to spend on bridges, so spend it it must and in the City precincts, too, quite regardless of whether it might not be far better to go to work either higher up o even lower down the river. A Minister o the Crown might help us here.

One last word on St. Paul's Bridge This Institute has for years been agitating, as you know, for proper architectural consideration for this bridge from the outset, and the Corporation turned a deaf ear to us. Parliament, however, came to our help, and at the eleventh hour three well-known architects were called in to advise the Corporation. This was what we had been working for all along. That some of us may have been disappointed at the form the advice took is not the point. The lay-out received architectural consideration before the Corporation got its Bill and now we can only devoutly hope tha if both bridges are gone on with, the Corporation will take such steps as will insure the designs of these two great bridges being as fine as it is possible to make them.

The reason why architects seem to be somewhat divided on the subject of St Paul's Bridge is that there are two very different ways of looking at the subject the first may be said to be the aspect o the bridge itself, and the second the aspec from the bridge. Unfortunately it is no easy to combine the two, and hence some of us took the view that the first thing to consider—apart from the great traffic problem—was what we saw from the bridge, and others what we saw when we looked at the bridge itself. Mr. Stoke suggested that Southwark Bridge might b rebuilt first, so that we may see wha effect it has upon the traffic. This cours would have the further advantage of preventing the river and its vast floating traffic from being obstructed by work to two bridges so close together at th same time.

The Architectural Mill.

The proposed new authority might b the First Commissioner of Works afte his present duties had been lightened These would be lightened by very largel reducing the size and output of the hug architectural mill now running under hi control. This mill turns out work jus now of the annual value of £1,195,41 which large sum is spent on palaces, la courts, Government offices, schools, labou exchanges, museums, post offices an telephone exchanges, etc., etc., and o the maintenance of similar buildings ove which the Office of Works has contro The work turned out is very varied i its nature, but unfortunately very un form in its architectural character. Th architectural staff which produces thi work receives £71,849 per annum, o just about 6¼ per cent. on the outla for salaries alone, without any allow ance for rent, rates, taxes, pensions, fee to specialists, cleaning, lighting, heating porters, messengers, and various othe sundries. Five or six years ago th salaries amounted to only about 3½ pe cent. on the amount expended, whic was then about £400,000 or one-third o what it is now! Fifteen or sixteen yea ago only about £250,000 was spent pe annum, and the cost of architectural ad ministration was only about 2 per cent. These figures seem to show that the larg office is, the more expensive it becomes cent. to administer. He maintained the bulk of the work now produced the Office of Works might with advan- be put out to independent architects be better done at a smaller cost, and relieve the First Commissioner of rks very considerably, enabling him to work which we want him to do, and ing him from the work which we ld much rather he did not do. It t not be thought that the speaker had particular grudge against the Office f Works, or that he was finding fault the many good friends he had on the itectural staff there, for his remarks e directed against all large public ies who attempt to do their own archi- ure. The recent Congress at Rome sed a resolution to the effect that chitectural works intended for the e, municipalities, or other public es should only be entrusted to quali- architects after competition or other- ." It will thus be seen that the archi- s all over the world are in accord, and rder to further prove the case he had ed up the cost of the architectural k produced by the Admiralty and the r Office. Both of these authorities run e architectural departments, spending ound figures about a million and a per annum each, the former at a cost bout 7 per cent. and the latter about per cent. in salaries alone, and in er case, of course, including the cost nt, rates, pensions, cleaning, lighting, ing, etc., which, if added, would prob- raise the cost by about another 1 or er cent.

The Superintending Architect.

he speaker would like to have been to include the London County Coun- in his list, but could find no pub- d figures on the subject. He was told, ever, on good authority, that the itectural Department of this body is very economically at present, greatly e credit of the very able gentleman s head. He ventured to predict, how- , that when in the course of time that leman retires, no one else will be d with the same capacity for work and er of organisation; consequently con- n will arise, and the cost of pro- on go up to something like that in three other cases quoted. And the this department undertakes now, the ter will be the fall then. For it stands ason that one man cannot have time sign all the work produced by a great of this nature, and if he has not to do it himself it must be done by s. He is therefore at the mercy of taff, and if at the mercy of his staff not the mercy of the outside archi- In the case of the London County cil, their architect is even called the rintending Architect: his duty should fore clearly be confined to superin- ng the work, not of a staff, for then it nes its own work, but of those archi- who work in London under his juris- on; and this principle applies equally e architects of the Office of Works, dmiralty and the War Office, and large public and municipal offices, ll these gentlemen, if they attempt to n any work themselves, must neglect staff, and if they leave it to their it must be good, bad, or indifferent, ding to the staff, for one man even t control a staff, the salaries of , at the Office of Works, for ex- amount to something like £1,400 eek, or perhaps as much as 99 per of what our practising architects pay to their staff during a whole year instead of in one week.

In these days of free trade and buying in the cheapest market, why should public offices be given preferential treatment? If there are a number of professional men of high standing prepared to accept a recognised scale of fees, why should these huge cormorants receive about half as much again as the ordinary rate? He ventured to suggest that, without robbing anyone at all, thousands of pounds might be saved annually from the unnecessary expenditure now involved in running these large architectural mills. The three which he had named together spend annually in round figures about four and a half millions on building work at an average cost of about 9½ per cent., or 4½ per cent. more than the recognised payment of such work. This equals rather over £200,000 a year paid unnecessarily for the privilege of running these departments. It may be contended, however, that these departments are necessary, as there are a number of works like painting park railings, mending broken windows, etc., that must be looked after; but a staff of surveyors could do this very well, without mixing up architecture in the matter at all, and this, he imagined, is what was intended when the Office of Works was established. Again, it must be only too obvious that a large Government Office is not a likely place for the production of various kinds of architectural work either well or cheaply. In other professions does one man profess to be able to specialise in all subjects? Are there not landscape painters, and portrait painters, and some sculptors who work best in low relief and others in the round? Do not some lawyers go in for criminal work and others for the Probate and Divorce? Are there not doctors who cut at our insides and others who cut our throats? and even with us, some architects do church work and others domestic work; but these Public Offices, as far as the speaker knows, claim to be able to do everything from a palace to a prison, and no doubt they can, and equally well, too!

Reorganising the Profession.

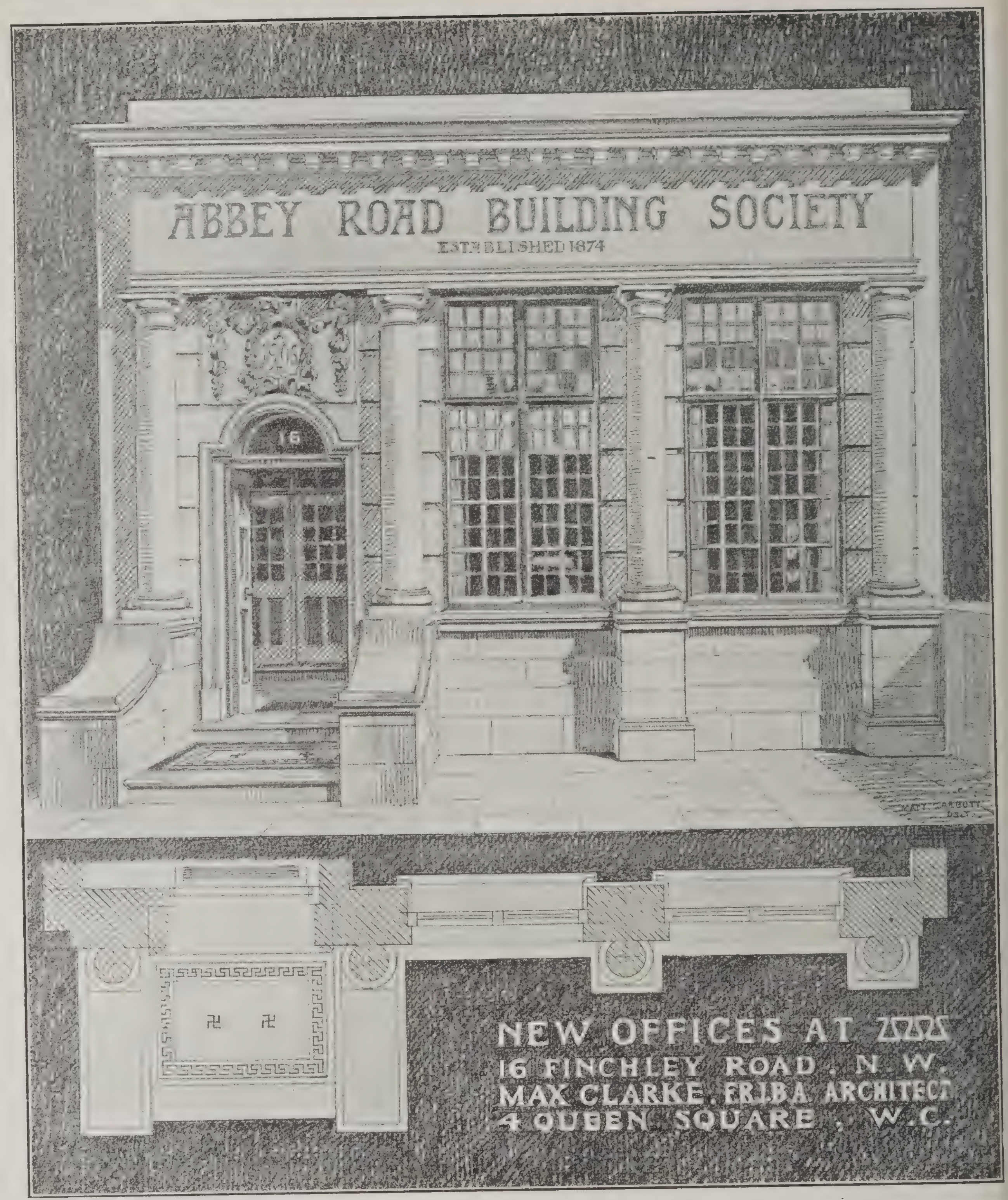
He had already referred to the Ninth International Congress recently held at Rome, and to the resolution passed there respecting architectural work intended for the State and Municipal Bodies being entrusted to non-official architects only. A number of other resolutions were also passed, but perhaps the following are the most interesting, viz.: (1) "That the right to use the title of Architect should be reserved to those who have obtained it as a result of a proper examination passed after an artistic, technical, and scientific education." (2) "That the title of Architect should be placed in the same rank as the title Master of Arts, Doctor of Medicine, etc." These two resolutions are particularly interesting to us just now, for this question had been before the Institute as long as he could remember. We have been working towards these ends for some time past, and as a preliminary step have created a new class of members called Licentiates, nearly two thousand of whom have already joined our ranks. With the object, too, of organising the profession—with the sanction of Parliament—into a strong, united, disciplined, and protected body, negotiations have been proceeding between this Institute and the Society of Architects, it being felt that two Kings in Brentford were hardly necessary, and that together we should be much more powerful than working independently. A number of meetings were held early in the year, and the general principles and a number of the details were satisfactorily agreed upon. Unfortunately it was found that we had perhaps exceeded the powers we possess under our existing Charter and By-laws. This was rather a shock to some of us, but as we had gone so far, we felt that in justice to ourselves and to the Society of Architects, we could not do otherwise than make good the mistakes made. Your Council has therefore been considering a revised Charter and By-laws which will enable the two bodies to unite under terms advantageous to both parties. This Charter and By-laws will, it was hoped, be very shortly laid before the members, and the President trusted they would pass them, not, of course, without due consideration and discussion, but without forgetting what has already taken place. For many reasons it seemed to him obvious that the two societies should unite, but the reason that will perhaps appeal most to our only too human natures is the fact that by building up and increasing the power and influence of this Institute we are building up and increasing our individual power and influence. For the fact of belonging to a powerful body strengthens each of us, and makes us more confident when dealing with the many difficulties that abound in our multifarious duties. If this address should happen to be read in the provinces, the President hoped that those interested in the good of the profession would endeavour to make as many of their confrères as possible join the Institute ranks, and so still further help to build up a really powerful and representative body. Another way in which the internal economy might be strengthened would be by a number of the Associates who have been Associates for years becoming Fellows. They are, in a number of cases, highly qualified in every way to become Fellows, and the President hoped they would consider the advisability of doing so.

The King Edward Memorial.

It is a matter for congratulation that an architect has been associated with a sculptor in connection with the King Edward Memorial. The ideal method, no doubt, would be for one man to do the whole thing, but until our sculptors take a little more trouble to ground themselves in architectural matters, the only course that will insure our monuments being satisfactory is to associate an architect with the sculptor: the custom hitherto too prevalent of leaving the sculptor to produce his own so-called architecture, or to get some compliant ghost to do it for him, is most unsatisfactory.

A British School in Rome.

You will be glad to hear that there is now an immediate prospect of something in the nature of a British School being established in Rome, such school to embrace architecture, painting, sculpture, and archæology. Nothing, however, very definite has been settled, but there are prospects that, aided by private benefactors, helped by the Commissioners of the Exhibition of 1851, and backed up by the Royal Academy, the Royal Society of British Sculptors, and the Institute, a school will be shortly opened in Rome. Scholarships connected with it will be



established, he anticipated, by this Institute with funds lately left under the Jarvis bequest, and the President thought he was at liberty to say that the Commissioners of the Exhibition of 1851 will probably also give at least one scholarship each year to architecture, painting, and sculpture, so that with students who may be able to attend this school, either privately or encouraged by the universities and schools about the country, a good school should be got together; and in such an appropriate centre for study as Rome, where most of the other nations have schools, we British subjects should be able to offer our students the means of completing their studies at a much higher level than has hitherto been the case. For it must be remembered that if we architects are to hold up our heads with any degree of success we must have something in them.

DISCUSSION.

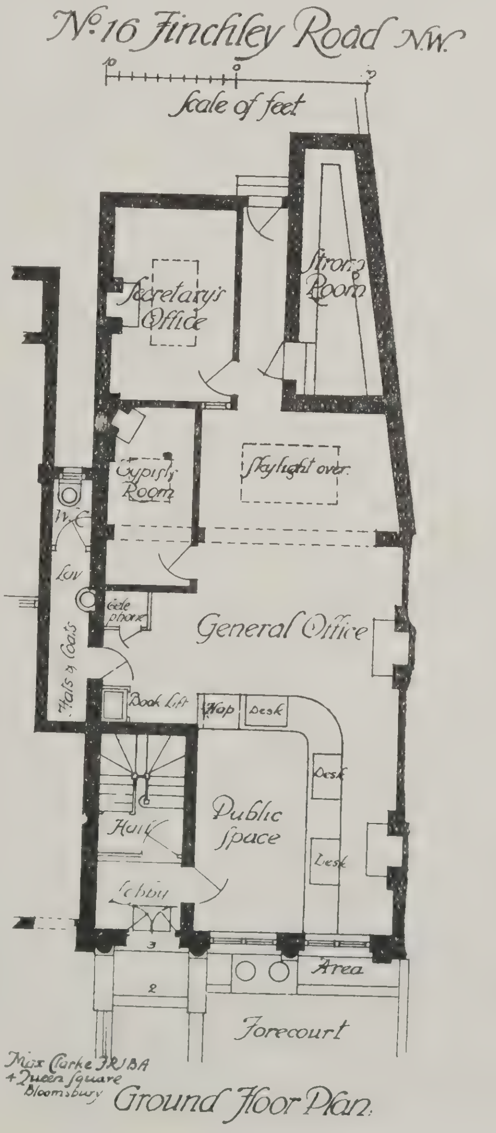
Sir Robert Hunter, proposing a vote of thanks, said he had noticed in the Presidential address a suggestion for the throwing open of Government work. As a Civil servant he could hardly be expected to rejoice in the prospect of a large number of his colleagues having to be discharged. The matter, however, was well worth the attention of the Treasury. That department might also be able to put a different complexion upon the figures which Mr. Leonard Stokes had very rightly quoted. The bulk of the buildings dealt with by the Office of Works, he continued, were post offices. It would ill become him to offer an opinion upon the elevatio these buildings, but he understood their construction was excellent, and they were well adapted to the purpo which they were designed. He consi that some controlling authority was necessary for the proper supervision so-called London improvements. T the difference between London and in this respect had always been app London, despite its many fine buil always seemed to be lacking in those effects which gave him, personall much pleasure when visiting Paris. large area surrounding and incl Regent Street, laid out by Nash, one time a uniform design, at onc monious and pleasing; now it was n the one nor the other The Offi

ods and Forests, to whom the ground
nly belonged, had allowed the line
e broken up, and there was now
ing about Regent Street to gratify the
in the matters of proportion and sym-
y. Piccadilly Circus, for instance,
e by no means void, was certainly
out form. Of course, the price of
in London gave an incentive to the
ing up of the largest number of build-
upon a given site, and to get as
h money as possible in that way. Re-
ng again to the proposal for some
rvising authority in architecture, the
ker said that they had to consider in-
lualism, to which our success as a
n was largely due. Individualism
d resent the intrusion of a board of
rol. That control of some sort was
ed they would all agree. The remedy,
peared to him, was the growth of
ic opinion. Hitherto, whenever any
scheme was promulgated, the attitude
e public mind was that beauty and
netry were very excellent qualities,
f they were to cost money they must
way before the consideration of
ce. There were better signs lately,
ver, as shown by the recent contro-
over St. Paul's Bridge. Whether
inal decision in this matter was satis-
ry or not, it was at least notable that
ament had directed that expert
on should be taken from the æsthetic
artistic point of view. In conclusion,
peaker congratulated architects upon
rowing importance of their profession,
scope of which was widening—town-
ning, for instance, so enthusiastically
oted by a Minister of the Crown,
a recognised branch of the archi-
work. Such spirited and sugges-
papers, too, as that to which they had
ied, would help greatly in the growth
e movement.

. *I. K. Pond*, President of the Ameri-
Institute of Architects, said he con-
ed it a great honour to be asked to
d the vote of thanks. He, with
s, had recently been speaking in
, where it was pretty certain they
not been understood. But between
hild and the Mother Country there
not only community of thought and
h, but also community of ideal. The
of the President's speech which
aled most strongly to him was the
ble establishment of a British School
ome. As in the case of St. Paul's
e there were two points of view, so
was it in the case of the School at
. There was the point of view look-
t the School, and the point of view
ng from the school. The question
What was the school going to bring?
id not blame his confrères for being
d up in tradition; they commenced to
n Classic when young, and they con-
d doing it when old. In fact, he
l go so far as to assert that the
icans were more shackled by tradi
than the English. But what would
hool at Rome give? They (the Eng-
had culture—Oxford, Cambridge, the
h Museum, the National Gallery;
were close to the Continent, and could
pursue their studies in that direc-
Certainly they did not lack in cul-
From his knowledge of the school
his own Institute had established in
, he would advise the student not to
ome as a studio, but as a place for
nellowing of his own ideas. The
nt did not want to know how many
ngs were erected in a certain period
how many stones they were com-
; but he did want to know what was
npelling motive behind them, and it
ith this knowledge that he could do
good for his own community. With regard to another aspect of the Presidential address, the speaker said that they had a law in the U.S.A. by which important work was given out to individual architects. Efforts were being made to upset this law on the pretext of increased cost; but he had figures to prove that individual work cost 6 per cent. as against 7 per cent. for departmental work. Concluding, he hoped that while they retained their law, we might be successful in bringing about the desired reform.

OFFICES OF THE ABBEY ROAD BUILDING SOCIETY.

The business of this society was for many years carried on in the private house, No. 16, Finchley Road, St. John's Wood, but the growth of the business rendered necessary an entire remodelling. The arrangement of the new ground floor and front elevation are shown by the plan and view illustrated. Upon the upper floors are provided a board room and accommodation for the Board, together with the rooms of the secretary The front is in Portland stone, and the public portions of the interior are panelled and fitted in oak. Messrs. J. Jarvis and Sons were the contractors for the general building work, oak panelling, etc.; Messrs. Henry Hope supplied the metal casements; and Messrs. Goodalls, of Manchester, supplied the oak counters, desks, fittings, and furniture for the board room and offices. Mr. Max Clarke, F.R.I.B.A., of 4, Queen Square, Bloomsbury, W.C., was the architect.



THE WAR OFFICE AND SCOTTISH CONTRACTS.

It having been stated in the "Scotsman" that, "as the result of repeated representations made to the War Office by Mr. C. E. Price, M.P., the Army Council have now agreed that in future building contracts in Scotland the quantities shall be measured according to the Scottish mode, the Council of the Society of Measurers in Scotland have indicated that the concession adequately meets the grievance under which Scottish building contractors have hitherto laboured," a correspondent writes to the same paper expressing his opinion that this announcement is satisfactory as far as it goes, but it does not go far enough. It is, he admits, at least valuable as an admission from the War Department that their methods hitherto in dealing with Scottish contracts have not been in accordance with the prevailing practice in Scotland. For obtaining this much, thanks are due to the member for Central Edinburgh for the persistency of his representations.

But, he asks, why should it have been necessary to make so many representations on so obvious and commonplace a matter? The statements and facts embodied in the requisitions forwarded to the War Office were capable of easy demonstration to any reasonably disposed person who would take the trouble of comparing the standards of this Department with those in vogue throughout Scotland. What practical results are now to follow remain to be seen.

It would be interesting to know, however, the correspondent continues, how far the reforms or concessions indicated differ from, and improve upon, those suggested to the Building Trades Association as the result of their requisition to the War Office on the subject. Before it can be accepted that "the concession" reported to have been made to the Society of Measurers "adequately meets the grievance" of the Scottish building contractors, it would be well to know what the latter have to say in the matter. If reports speak truly, the "concession" made is in a matter of detail, affecting only one out of several subjects brought to the notice of the Department. It is restricted to a question of measuring on "extras" or "variations" merely. All other matters remain pretty much where they were, and the building contractors are not satisfied.

After all, the building contractors are chiefly concerned. The ordained surveyors have little or nothing to expect from the War Office. For a number of years now, the correspondent continues, the Department has been running the experiment with its own staff of doing the whole of the professional work in specifying, scheduling, and measuring constructional contracts, and it may safely be assumed, he contends, that as long as this system lasts, no outsiders will be recognised. Whether the country gets the same results or obtains value for its money is another question. But notwithstanding, common-sense would teach one to expect some conformity in the practice to ordinary business standards, especially in the adjustment of questions which involve so much practical detail and expenditure of public money. You cannot, in the complicated and elaborate machinery of modern trade enterprise, whether in the management of labour or the construction of big establishments, import the methods of the barrack-room and the rule of the drill sergeant. A certain amount of elasticity and freedom there must be, and in these days, when politicians and Ministers are tumbling over each other in their desire to placate differences elsewhere by means of conferences and Conciliation Boards, it is time attention was directed to the sins which lie at Departmental doors, and the correspondent suggests that a beginning should be made at the War Office.

BUILDING INTERESTS IN SOUTH AFRICA.

From our own South African Correspondent.

Johannesburg, 2nd October, 1911.

Building Trade Prosperous.

The General Secretary of the Master Builders' Federation (Mr. Jas. T. Brown), who is also proprietor and publisher of the "South African Master Builders' Journal" and the "African Architect," is the best authority on the state of the building trade in this country, and he informs me that it "still continues prosperous." This is, indeed, a fact beyond dispute, and contractors generally see work in front of them for a considerable time to come. The building business now may be said to have come to a fairly solid basis. A very good sign of the substantial progress of Johannesburg as a residential centre is that people are notably keener on building houses for themselves. Most of the development is going on at Houghton Estate and at Parktown West. The speculative house to-day is a minor quantity, and there are scores of houses being acquired by men in decent salaried positions, who can pay off their interest and bond at the same rate practically as they would pay rent.

The New Town Hall.

The next important work to be taken in hand in Johannesburg is the erection of the new Town Hall in Market Square. It is now nearly ten months since the Duke of Connaught laid the foundation stone, which from that date has been carefully screened from the public view by a high galvanised iron fence plastered with advertisements. However, the tender of Mr. P. Jansen (£7,575) for the excavations and foundations has now been accepted by the Town Council, and rapid progress may be expected. The building will be one of the finest in South Africa, and constructed of stone. The architects, Messrs. Hawke and McKinlay, have, indeed, designed a most stately pile, the best view of which will be from Rissik Street, the frontage being set back sixty feet from the edge of the present pavement.

Theatres.

Some £10,000 is being spent on alterations to the Standard Theatre. The Orpheum Theatre, when ready, will be a most commodious place of entertainment, and the numerous bioscope theatres are all more or less undergoing improvements. A most remarkable feature in the social life of Johannesburg has been the marvellous increase during the past nine months of theatres and bioscope halls. Within a radius of a few hundred yards from Pritchard Street there are no fewer than twelve places of amusement. It is in these places that one can obtain an accurate impression as to the vast increase of the population during the past four or five years.

The Hospital.

Two large pavilions, to cost £40,000, are to be erected at the Johannesburg Hospital to meet the growing demand for larger accommodation at that institution. Each will contain roughly 100 beds, and the first pavilion will be completed in January next, while the second will be ready by April next. A new casualty ward will shortly be commenced at a cost of £2,000.

New Law Courts.

The finishing touches are being put to the new Law Courts, Von Brandis Square What remains to be done principally consist of plaster work and decorative embellishment to the handsome entrance hall. The buildings have taken about two years to complete, and the estimate of cost is about £135,000. Including electric lighting and heating apparatus, and other incidentals, the total outlay may be roughly put at £140,000. The new Courts stand well back from the street frontage. By an arrangement between the Public Works Department and the Johannesburg Municipality, the intervening space will be laid out in ornamental grounds. It is expected that the Criminal Court will be used early this month, probably with the commencement of the next session The formal opening of the new Law Courts has been arranged for October 13th. Mr. James Thompson, who has just returned from a trip to England, was the contractor for the whole of the superstructure. Messrs. Reid and Knuckey are contractors for Messrs. Chudleigh Bros.' new stores facing Eloff and President Streets, which have a total frontage of 400 ft., and are estimated to cost £72,750. Mr. J. A. Moffat is the architect.

Pretoria.

Building activity is still strong in t Capital. The new Government buildin for accommodating the head offices of t Union are progressing, while the new ra way station will be in every way wort of the administrative capital. A sum £20,000 is to be spent in building a n fire station, which will be probably t finest in South Africa. I understand th the flotation of the £1,000,000 loan h been postponed, but in the meantime Pretoria Council propose to issue bills £300,000 to carry out present schem The sum of £48,000 has been earmark for future tram extensions.

Coastal Centres.

Reports from Natal, Port Elizabeth, a Cape Town are also of a satisfact nature, but I need not particularise, a will deal with these centres in a fut letter.

LOADS ON TIMBER BEAM

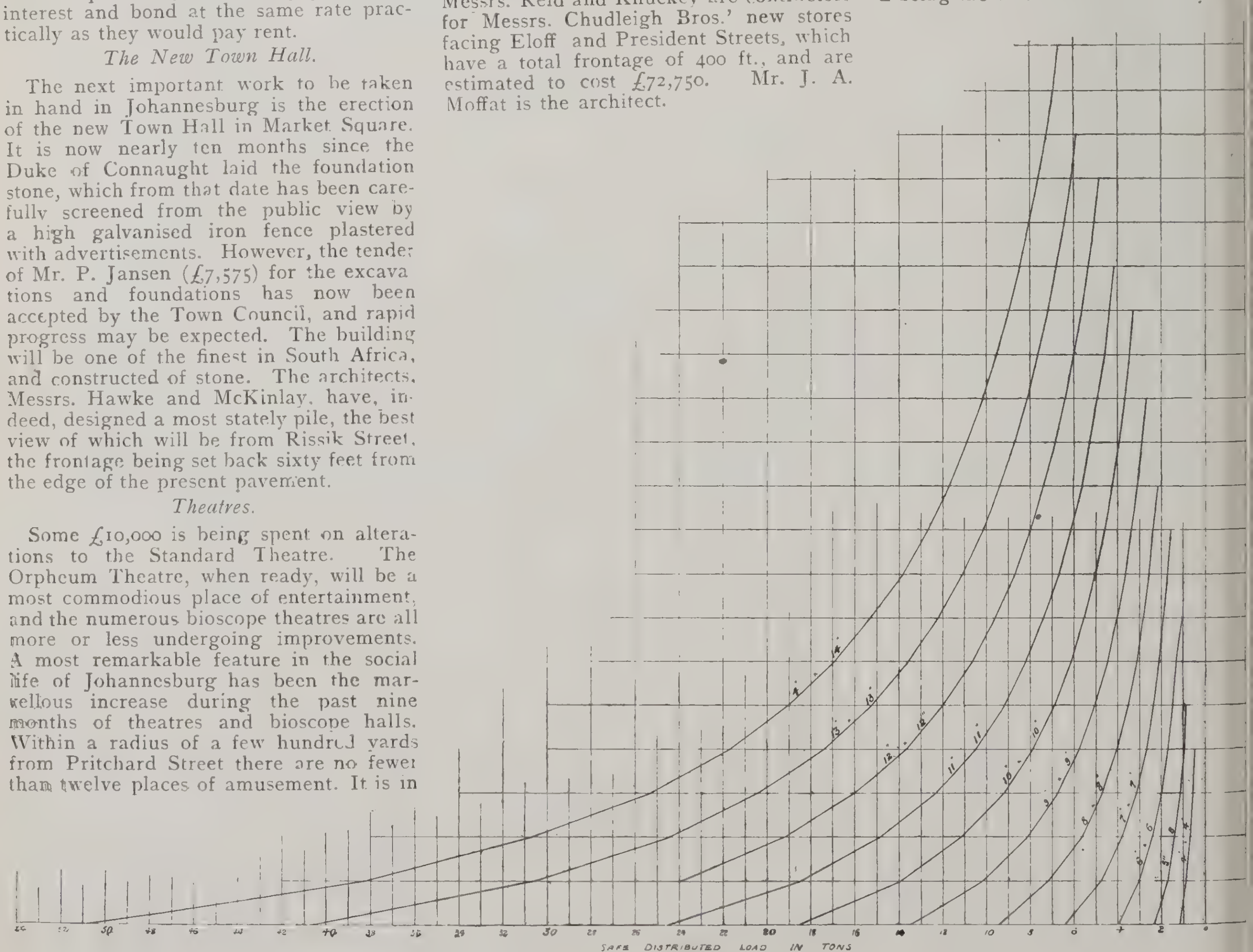
BY HUGH S. CREGEEN. A.M.I.C.E., P.A.S

It very often happens that a contrac wishes to find readily, without recours calculation, the safe load a beam o given size will carry, either in tempor works or in those of a permanent ch acter. The following table has b worked out to show the safe load on squ fir timbers ranging in size from 4 in. b in to 14 in. by 14 in. The calculations based on the equation in mechanics.

Bending moment = moment of resista or,

$$BM = Zf$$

Z being the section modulus and f the



Total Distributed Safe Load on Fir Beam in Tons.

Scantlings in Inches.

pan in eet.	14 × 14	13 × 13	12 × 12	11 × 11	10 × 10	9 × 9	8 × 8	7 × 7	6 × 6	5 × 5	4 × 4
3	50.81	40.68	32.00	24.64	18.51	13.50	9.48	6.35	4	2.31	1.17
4	38.11	30.51	24.00	18.48	13.88	10.12	7.11	4.76	3	1.73	.88
5	30.48	24.40	19.20	14.78	11.11	8.10	5.68	3.81	2.4	1.39	.71
6	25.41	20.34	16.00	12.32	9.25	6.75	4.74	3.17	2	1.15	.58
7	21.77	17.43	13.71	10.50	7.92	5.78	4.06	2.72	1.71	.99	.50
8	19.05	15.25	12.00	9.24	6.94	5.06	3.55	2.38	1.5	.86	
9	16.93	13.56	10.66	8.21	6.17	4.50	3.16	2.11	1.33		
10	15.24	12.21	9.60	7.39	5.55	4.05	2.84	1.9	1.2		
11	13.85	11.09	8.72	6.72	5.05	3.68	2.58	1.73			
12	12.70	10.17	8.00	6.16	4.62	3.37	2.37	1.58			
13	11.72	9.38	7.38	5.68	4.27	3.11	2.18				
14	10.88	8.71	6.85	5.28	3.96	2.89					
15	10.16	8.13	6.40	4.92	3.70	2.70					
16	9.52	7.62	6.00	4.62	3.47						
17	8.97	7.17	5.64	4.35	3.26						
18	8.46	6.77	5.33	4.10							
19	8.02	6.42	5.05								
20	7.62	6.10	4.80								
21	7.25	5.81									
22	6.92										
23	6.62										

wable stress in the fibres. For a dis-
uted load on a beam supported at the
ls, the BM is found by the following
nula, which is no doubt familiar to
se who have studied mechanics :

$\frac{wl}{8}$ w being the load in tons and l being the span in feet.

l the moment of resistance, Zf, is in
er symbols :—

$$\frac{\frac{BD^3}{12}}{y} + f$$

eing the breadth of the beam in inches;
the depth; y the half depth (or distance
m the neutral axis to outermost fibres);
l f has been taken for fir as ½ ton,
ed on an ultimate stress of 5 tons per
in., with a factor of safety of 10.

he left-hand column of the table gives
span in feet, and the scantlings of the
ms appear at the top, the results being
wn in tons, viz., the safe distributed
d required. They have been worked out
the assumption that no beam will ex-
d in depth 1-20th of the span.

graphic representation of the loads is
wn in the illustration, enabling any-
to arrive quickly at the requisite
roximate loading on a given timber.

GLASGOW BUILDING TRADES EXCHANGE.

he annual general meeting of the
ilding Trades Exchange, Limited, took
ce recently in the offices at 67, Hope
eet, Colonel Bennett presiding. The
airman, in moving the adoption of the
ual report, said it could not be doubted
t the main cause of the falling off in
income derived from the various
rces of the Exchange revenue had been
long-continued serious depression in
building trades. In spite of the fact
t for some time the commercial pros-
ity of the country improved generally,
ugh it is doubtful if the improvement
continuing, even what improvement
re was did not as yet appear to have
ched the trades with which the Ex-
nge was connected. In fact, from the
an of Guild's last review of the busi-
s of his court, it would appear that the
t year had been the lowest both in the
mber of linings, and the value of build-
s since 1890-91—a period of 20 years
e report was adopted.

MODERN MILL CONSTRUCTION.

"Modern Mill Construction" was the subject of a lecture given by Mr. F. Moore at a meeting of the Bradford Textile Society at the Technical College last week.

A large number of the structures used in the Bradford trade, he said, were of considerable antiquity, and, together with their machinery, were due on the scrap heap. Any further material extension of the wool industry of this district would have to be provided for by the erection of new structures capable of bearing the strain of vibration of the powerful new machinery of modern times.

Referring to structural materials, Mr. Moore said the developments in the production of constructive steel in place of cast-iron pillars and timber beams, along with the improvements in the manufacture and practicability of concrete, had all but superseded timber in heavy work. The cost of steel and cement had been gradually lowered, whilst, on the other hand, timber had greatly increased in cost. Combined concrete and steel buildings, he said, offered great advantages in the matter of fire insurance premiums. The combination bound up an erection, and was strong to a degree never before attained, being also immune from the decay which sometimes quite unaccountably occurred in timber. In conclusion, the speaker suggested the cost to-day of structures on modern lines as he had outlined, with fireproof flooring and steel roof glazing, to be from 20s. to 35s. per superficial yard, according to the particular section of the trade for which the building was required.

At a meeting of the Textile Society of the Manchester School of Technology last week, Mr. W. H Cook, examiner in cotton spinning of the City and Guilds of London Institute, gave a lecture on "The arrangement of a modern spinning mill." He considered, he said, that by far the most important point in connection with the erection of a spinning mill was the choice of a suitable site. A position should be chosen on low-lying ground, preferably in a valley with streams flowing through it and with protection from east winds. Mills so situated had always been found more productive than those built on high land. Speaking of the design of the mill-buildings, Mr. Cook said that all architects adopted much the same plan. It was, generally speaking, safe to accept the design of any architect of repute. The variations in the plans of different architects were variations of unessential details only. But he found fault with the designs of all present-day architects on two points. The great expanse of glass at the sides of the mill, and the great height of the rooms, were both causes of bad spinning, particularly in the cases of mills which were exposed to east winds or were in a dry atmosphere. If he had to build a mill he would not have the cardroom more than 14 ft. high. Mr. Cook also dealt with the arrangement of the machinery in a spinning mill and the power to be employed.

THE WIDTH OF ROADS.

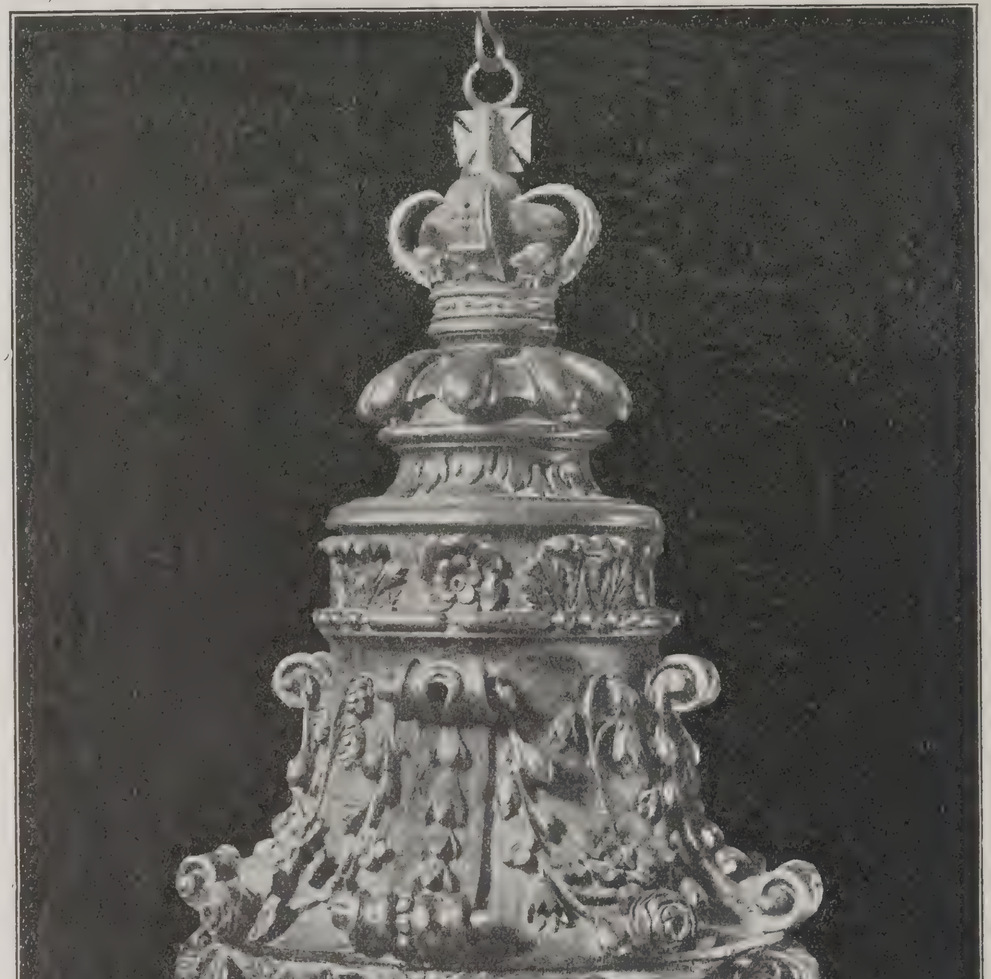
Mr. Raymond Unwin, F.R.I.B.A., in his fourth lecture on town-planning at the Birmingham University, dealt with the question of roads and the relation of the frontage of the individual building to the total length of road usually required per house, allowing for the necessary waste at street corners, road junctions, public buildings, minor open spaces. He said that the amount of road per house required for the development of an estate on proper lines to cover all allowances would usually be from 15ft. to 20ft., that is from 30ft. to 40ft. of individual frontage on one side of the road. It is obvious that even taking the lower figure, when laying out land for small cottages, the cost of the road must necessarily bear a very high proportion to the cost of the cottage, and that in order to give adequate frontage for cottages to be properly designed without unhealthy projecting backs it was very important that economy in the cost of roads should be attained.

In the past in this country the width of roadway had been the most ready means within the power of municipalities for regulating the amount of open space to be left in front of the building, and wide roads had been required partly on this account. Under the Town Planning Act, however, other means were provided for restricting the amount of building which might be put upon an acre of ground, and therefore it would become possible to grade the widths of the roads according to the purpose which they served. It is just as important to secure greater width for some of the main roads as it is to secure less width and less costly construction for minor roads which serve no purpose but to give access to a few cottages. The lecturer dealt with seven different characters of roads required to meet different degrees of traffic density, and pointed out the uses and limitations of each class. Plans and photographs of the different kinds of road were shown.

DETAILS, OLD & NEW.—XXXII.

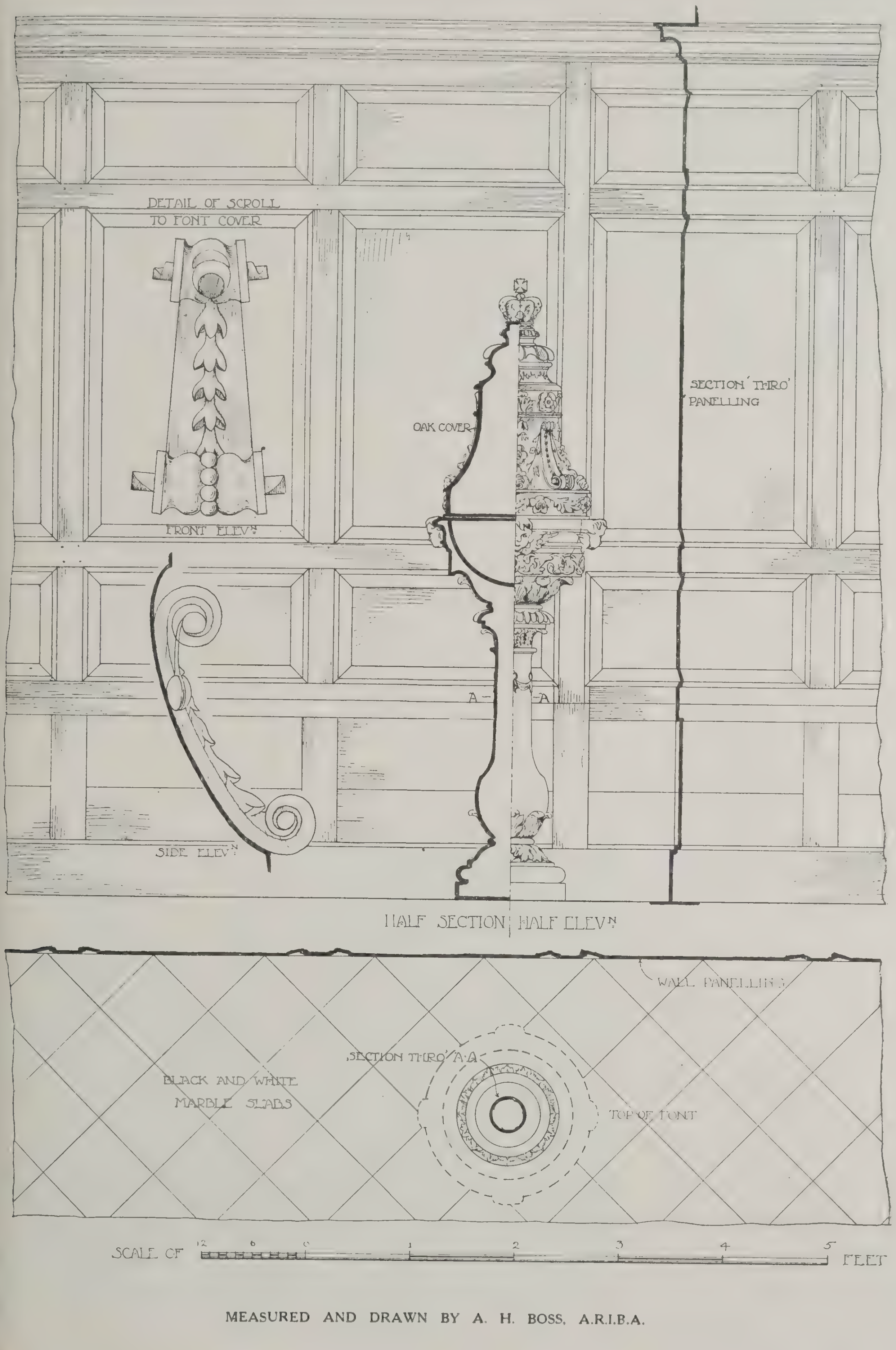
Font and Panelling in St. Mildred's Church, Bread Street, London, E.C.

The cover of this font is one of the few things in the church that survived the Great Fire of 1666, the others being the registers, the plate, the helmet of Sir Nicholas Crisp (now over the vestry door), and probably the little figure of Time on the pulpit. The font itself is of white marble, and the cover was formerly painted in imitation of this; the paint, however, was removed some years ago, and the wood now remains exposed. The crown on the top is gilded. St. Mildred's is one of Wren's churches. It contains some splendid woodwork, enriched by carving attributed, though not with certainty, to Grinling Gibbons.



FONT AND COVER, ST. MILDRED'S CHURCH, BREAD STREET, LONDON, E.C.

FONT AND WALL PANELLING
ST MILDRED'S, BREAD STREET, E.C.



MEASURED AND DRAWN BY A. H. BOSS, A.R.I.B.A.

PICTURE EXHIBITIONS.

Society of Painters in Water-colours.

The winter exhibition of this Society it may be remembered was originally started as an exhibition of sketches and studies only, and members who choose to restrict themselves to that class of work can always do so, though in some years the exhibition has in fact differed little in its contents from the May exhibition. This year the proportion of works which may be classed as sketches and studies is larger than usual, and perhaps it is better to have this variety, though one may rather regret to have from Mr. E. R. Hughes only some portrait heads in pencil, instead of the highly finished figure-picture by which he is usually represented. The sketch-and-study ordinance has, however, the interest of inducing some able artists to interest us by going out of their usual track; Mr. Dollman, for instance, surprising us by a charming landscape sketch; Mr. Walter West by a "Sunset on the Nile" and a drawing of a park entrance gate; and Mr. Clausen by a view from the river Thames, in which the cathedral is as badly drawn as it usually is by painters; it takes an architect to draw St. Paul's. Among the things which compel attention are two failures; Mr. Sims's "Love, the Hunter," which is unintelligible; and Mr. Buckman's decorative frieze of "Street Hawkers of the Victorian Era," which proves that street hawkers cannot be made decorative. Miss Fortescue-Brickdale's angel in a blue gown and upstretched wings is fine as a design, only the angel's feet look very material and not very charming; her small scene from "Pippa Passes" is good. Mrs. Laura Knight is always clever, but her two women in "Candle-light" are very ugly (that does not seem to matter nowadays); "Spring," illustrated by the figure of a peasant girl on a hill-top, seen against the sky, is her best work.

Architectural subjects are largely represented; Mr. Reginald Barratt sends a number of his studies of Venetian buildings or details, among others a very fine drawing looking out on to the Piazetta from the loggia of the Library, the arcade of which forms the foreground, and a still finer one of the "Lily Columns" at the south-west corner of St. Mark's. Mr. Rooke exhibits a large and important drawing of Exeter Cathedral, taking one of the towers as the nearest portion; this is one of the set of architectural illustrations which he is doing for the Birmingham Art Gallery; it is very powerful and learned architectural drawing, but we certainly never saw the building look like this in colour. Mr. Paterson shows a good broad sketch of the choir of Iona cathedral, rather woolly in texture for stone-work (but that is Mr. Paterson's way); Mr. Lorimer a drawing of "The Sculptured Capitals of Iona"; and Mr. Cayley Robinson, in "Æneas and his chieftains after the Fall of Troy" shows a very careful study of early Doric architecture, somewhat redeeming a picture in which the figures are absurd.

Among other things worth note are Mr. Lorimer's "A Road," a pleasing picture made out of almost nothing; various landscapes by Mr. Eyre Walker, especially "A Silvery Morning"; a "Dance of Mænads" by Mr. Walter Crane, which is amusing, whether intended as a joke or not; a grand scene in Skye by Mr. Colin B. Phillip; Mr. Napier Hemy's "To Weather the Reef," one of the best sea sketches he has ever done; Mr. Sullivan's large picture, "Dian's Pool," with would-be classical figures of marvellous and unpardonable ugliness; and, on one of the screens, Mr. Alexander's remarkable study of "A Frog," a nude figure much more interesting than Mr. Sullivan's nymphs.

The Goupil Gallery Salon.

Those people who are old-fashioned enough to regard painting as the art of producing beautiful pictures will not, of course, expect to find their prejudices much consulted in the Goupil Gallery Salon. But if there is not much beauty to be met with, and if there are various things which it seems almost a farce to exhibit to public view, there is a great deal that is clever and interesting. In the downstairs room Mr. Greaves's large picture of "Chelsea Regatta," painted probably a good many years ago, though it wants that unity of conception and execution which goes to make a real picture, contains a great deal of clever and conscientious work, of quite a different kind from the style prevailing in the exhibition. The best of the works exhibited, in fact, have exactly the opposite kind of merit; they are the work of artists who have a keen perception of composition and effect, but ignore detail to an extent which reduces their work to the condition of sketches on a large scale. There is little that is commonplace, but a great deal that is crude and violent in effect. Mr. Von Glehn's "The Mill Race" is what may be called a powerful foreground landscape which may claim to be in the school of Constable, only it is loaded in so thickly as to lose the aërial effect of nature. There are some good little landscapes by Weiss, Professor Russell, and others; a good sketch by Mr. Henry, "Before the Mirror"; an "Idyll" by Mr. Fred Stratton, which, vague as the figure painting is, is fine in colour; a delightful baby by Miss or Mrs. Arnesby Brown, and a hideous child, "The Little Squaw," by another lady artist.

Upstairs the familiar name of Henri Martin is attached to two landscape studies, and the unfamiliar one of René Gansky to two well-drawn nude studies, in which however the artist, like Mr. Strang (in his present mood), seems to think the form without the colour and texture are sufficient for nude painting. However, he is aiming at design, and as design these are good. One hardly knows what Mr. Strang is about, with his method, now, of painting flesh like parchment; and his "Rest Time," a painter and his model, hardly escapes being vulgar. Mr. Patrick Adam's "The Dining Room" is a capital piece of Still Life painting, and in the third room Miss Betty Fagan's "Models Posing" is a really brilliant fantasia of colour and broad execution. Among Mr. Kynaston's small and rather loosely painted pastorals the one called "Moonlight Idyll" is a success. Mr. Hornel is carrying his peculiar manner to extremes, and "The Old Rhododendron Pond" looks a mere aimless scumble of paint.

Among a medley of often eccentric sketches in the upper room, some of them preposterous in their nature, all the landscape sketches by Mr. Tatton Winter are worth looking at, and those by Mr. Ackerman, Mr. Mayor, and one or two others; and Mr. Greaves's two fine drawings of riverside scenes seem a refreshing return to common sense after some of their surroundings. Why does such
clever artist as Mr. Orpen choose to ma
a drawing of two nude "Bathers" wi
heads of the plainest and lowest typ
Their bodies may be useful studies, b
why exhibit them? They are not beau
ful nor desirable.

It is the worst of the Goupil Sal
that one is interested one moment a
exasperated the next.

LIVERPOOL ARCHITECTURAL SOCIETY.

Mr. Arnold Thornely, F.R.I.B.A., w
has been re-elected President of the Liv
pool Architectural Society, delivered l
opening address at the first meeting of t
new session, which was held at the roo
of the Society, 13, Harrington Street, l
week. The prospects of the new sessi
he said, were distinctly promising, but
pointed out that their Society would n
increase in influence unless the stagn
condition of the membership roll w
changed. He particularly regretted t
small percentage of students on the boo
While some young members of the prof
sion were inclined to go to London,
thought such a course was not necessa
as Liverpool could well hold its own
matters of architecture and opportuni
They had in Liverpool a School of Arc
tecture second to none in the country. W
should not the offices in this city be lool
upon as secondary schools, and so prod
a school of Liverpool architects wh
work would be a pride to their fellow c
zens? Mr. Thornely alluded to recent
cases affecting the profession of archite
and pointed to the responsibility which
of these legal decisions placed upon ar
tects in connection with the supervis
of building operations. He hoped the
stitute would take up these vari
matters, particularly with regard to
question of dry rot, and, if possible,
vide some means of protection to its m
bers.

Turning from the business to the art
side of the profession, the Presi
alluded to the recent discussion with
gard to the propriety of erecting an eq
trian statue as a memorial to King
ward. The architects' profession was
most unanimously against that sch
and taking into consideration the l
amount of criticism which it provoked
hoped the Memorial Committee w
abandon it entirely, and look for s
other site in the city that would meet
more general approval. He conte
that the site at the Pierhead seeme
have unrivalled claims for such a m
ment. He conceived a comprehe
scheme for this area, and he was
vinced that if the citizens of Liver
fully realised the architectural poss
ties and the vast improvement that c
be effected, there would be no great
culty in obtaining the necessary fun
carry out the work.

Mr. Thornely concluded with a
interesting report of the Internat
Congress of Architects which was he
Rome, and which he attended as the
gate of the Society. He also pro
a large number of photographs
Rome for the inspection of the meml

"HOMEWOOD" — A FAMOUS COLONIAL MANSION.

"Homewood," surrounded by sixty acres wooded land, is an excellent example of Colonial mansion in America. It is the t of the well-known brick Colonial uses of the South, and is also the thest north of any of the houses of this ss. Colonial houses show a marked ference in Maryland and Virginia from se farther north—in the North they re built on small estates, while in the uth they are on very large estates.

"Homewood" is a low rambling build- , 140 ft. in length, with the principal nt facing south-east and opening on to large lawn which is terraced down to rook.

A short driveway under tall trees leads a flight of wide marble steps, enclosed either side by a wrought-iron balus- de. These steps lead to the marble vement of the porch, which is the key- e of the design. The wood columns unusually delicate and refined, as is general detail of the porch and en nce. The pediment, richly ornamented cast stucco, has no equal in any of older houses.

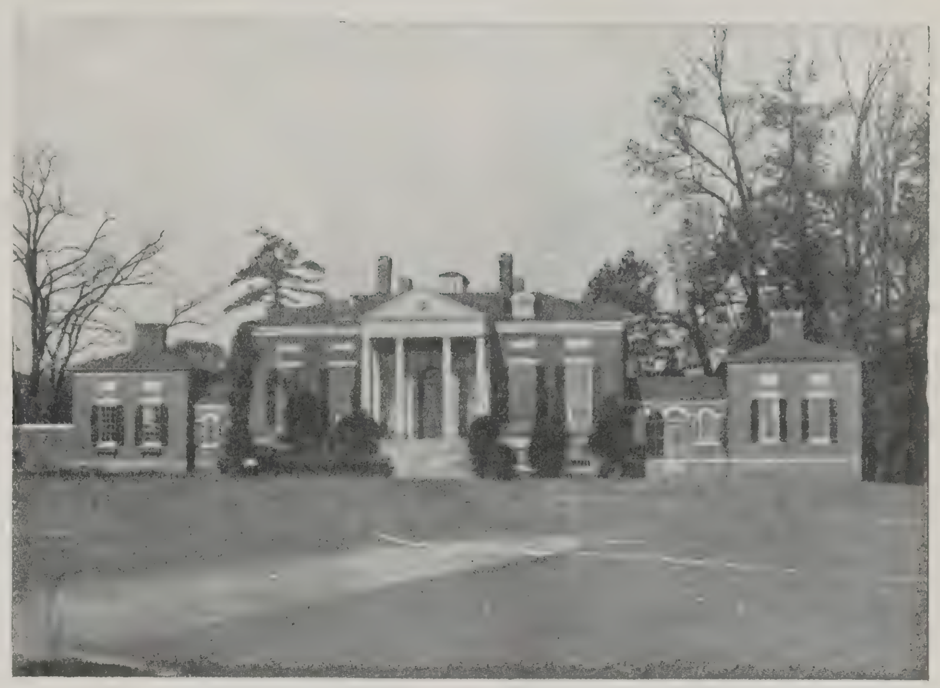
n general the design shows the influ- e of the Annapolis and James River uses. Here the designer breaks away m architectural traditions, and influ- es a style of detail that is found in Baltimore houses.

The exterior walls are of narrow red cks laid in Flemish bond, with sills and ne courses of a light soft stone. In north and south connecting wings most carefully built brick arches, over Palladian windows, the semi-circular h springing from the flat arch, all hav- the same centre and being self-sup- ting. There still hangs at the left of east entrance the cast-iron seal of fire company of long ago.

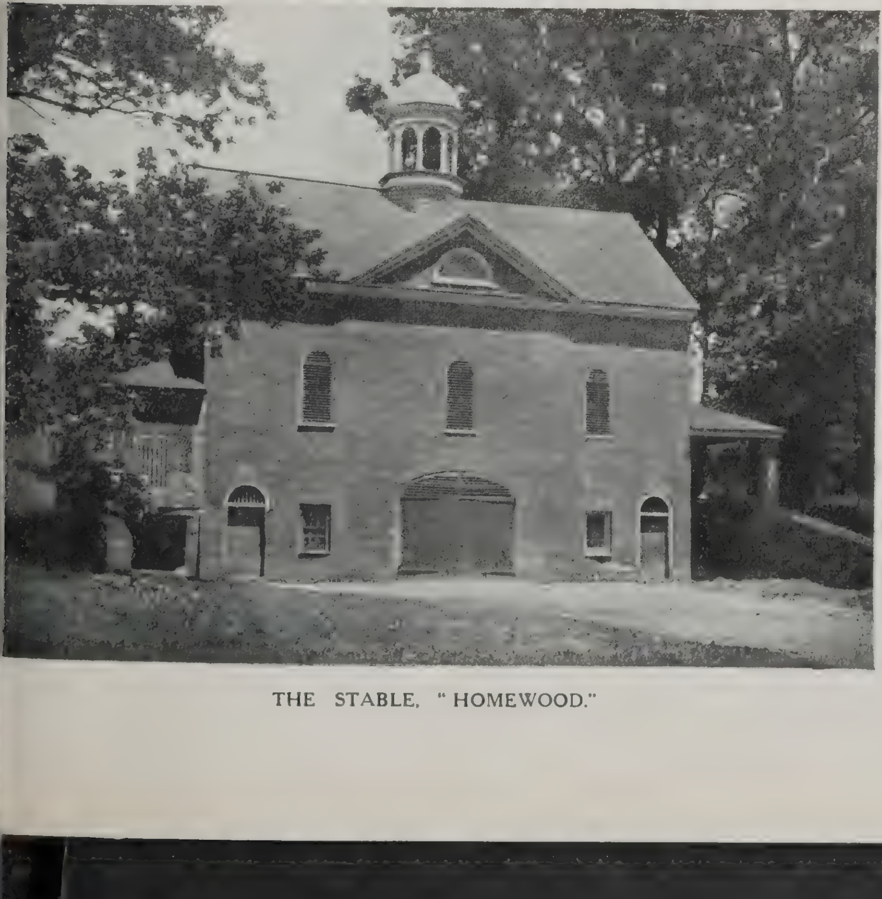
The entrance is through two sets of ors, the outer of glass and the inner wood, opening into a large square en- nce hall, screened from the main ridor by a glass door and side lights h a leaded glass transom.

A corridor extends through the length the house from the kitchen to the chapel. In the corridor and entrance hall are wood arches, finely wrought by the skilled workmen of the time. An enclosed stairway leads from the garden entrance hall to the second story, where there are but four bedrooms, most of the bedrooms being on the ground floor. The chimney-pieces show quite the same refinement and free design as the exterior, and they are of a very marked difference in the various rooms. All the ornament throughout is cut in wood, fine geometrical designs, beading and fluting being freely and effectively employed.

"Homewood" was built in 1803 by Charles Carroll, of Carrollton, as a residence for his son. It is now the property of the Johns Hopkins University, to be used as the residence of the President of the University.



"HOMEWOOD," BALTIMORE, MARYLAND, U.S.A.



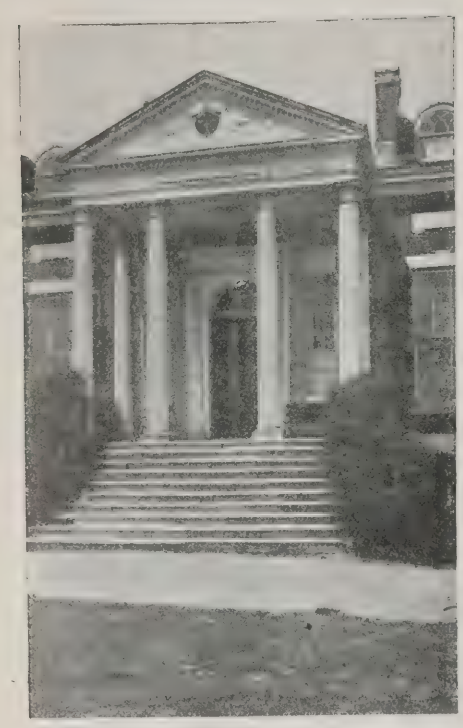
THE STABLE, "HOMEWOOD."

LONDON'S NEW RESERVOIR.

An important addition to the water supply of London was made on Saturday of last week, when the Lord Mayor opened the Island Barn reservoir at East Molesey. Constructed at a cost of £152,727, the reservoir when filled will contain 900,000,000 gallons. The water will be obtained from the Thames. Sir T. Vezey Strong, who was accompanied by the Sheriffs, performed the naming ceremony, and admitted the water in the presence of a large and representative company. He was afterwards presented with a silver model of a tipping truck by Mr. Robert McAlpine, the senior partner of the firm of contractors for the reservoir. The Lord Mayors of Dublin and Cardiff, as well as many Mayors of Metropolitan Boroughs, attended in their robes of office, besides representatives from other cities and towns.

Mr. Barnard, who presided at the luncheon which followed, claimed that the Metropolitan Water Board were thoroughly good guardians of the interests which had been placed in their hands. He read an extract from a letter received from the President of the Local Government Board, who said: "May I take this opportunity of congratulating the Metropolitan Water Board, and yourself, on the success which has attended their administration. 'The London Water Famine' was at one time a headline commonly used in the London newspapers, but it has now disappeared from their pages. Notwithstanding the extraordinary dryness of the past summer the Water Board have met with ease the demands made upon them by the householders of Greater London. This is forcible testimony of the value of the policy of municipal ownership and central control, and the benefit to London which has accrued from linking up reservoirs which were formerly detached and isolated."

The Lord Mayor (Sir T. Vezey Strong), who was formerly a member of the Water Board, said that when the Board was created it was made responsible for a



"HOMEWOOD": ENTRANCE PORCH.

great business involving £50,000,000 of money. Not only did the Board take over an over-capitalised business, but the public were led to expect that directly they took charge the supply would be rendered more efficient, more bountiful, and more pure, and the cost would also be reduced. It was somewhat difficult to realise that expectation all at once, but the Board adopted a policy of efficiency first and economy afterwards. If there was any justification for municipal trading of any kind it must be that of allowing municipalities to control the essentials of health and life.

NOTES ON PAINTING.

BY ARTHUR SEYMOUR JENNINGS.

The Wall-Paper Designs for 1912.

Although the wall-paper designs for 1912 do not mark any considerable departure from those of the present season, yet there are several items to be noted which are not without interest. Ingrain papers seem to be less in evidence in the pattern books, and the reason for this can easily be understood. These need not be stated in detail; but it is obvious that the growing popularity of washable water paints is one of them. Water paints can now be obtained in some hundred of colours; and the best makes are quite permanent and form splendid backgrounds for furniture and pictures. The decorative effect is produced by putting in a stencilled or painted frieze.

Coming back to wall-papers, it may be explained that to take the place of ingrains a large series of hangings have been produced, having as a pattern narrow stripes, diapers, or dots, all printed in very faint colours. Many of the friezes, if used in this class of paper, give admirable effects. Panelled work continues to gain favour, as do also "extension" friezes, which have been previously referred to in these columns.

Black, but not Sombre.

Some time since a paragraph went the rounds of the Press to the effect that black papers were coming into fashion, the idea being that the black back-ground would show up to advantage ladies' toilets. In the better class of wall-hangings there are a few black papers printed on a dull background. They have by no means a sombre appearance, as the pattern is well covered and brilliant in colouring.

A New Scheme of Decoration.

At the recent convention of Master House Painters and Decorators at Derby, a Lancashire decorator showed some novel designs intended for interior decoration based upon a Continental style. For the filling or main part of the wall a comparatively plain paper is used, but a feature of the scheme of decoration is that, in addition to the hand-stencil frieze, which is more or less elaborate, a hand-stencilled border is introduced below the picture rail, which is black, and another similar border is used immediately above the skirting. Very happy and novel effects are produced in this way.

Anaglypta Cornices.

The latest departure of the manufacturers of the well-known Anaglypta are cornices which are very easily placed in position. They are made from 3 in. up to 8 in., in about twelve different designs.

Cut-Glass "Jewels" and Mother-of-Pearl.

Some novel decorations may be mentioned. Of a somewhat startling character is one that comes from Germany. It consists in using cut glass "jewels" of various colours, in borders, friezes, etc. At first sight there appears to be something very tawdry in such a scheme; but much depends on the application; and it will be found that if these jewels are used discreetly and very sparingly, say, for instance, at corners, etc., the effect is quite good. The "jewels" are well made, cut truly, and reflect the light very prettily, and there is no difficulty in fixing them. This brings to mind that mother-of-pearl may often be employed with great success where a rich effect is required. It would not, of course, answer to use it everywhere; but above an oak or rosewood dado, say, in a smoking-room or a billiard-room, a border made of mother-of-pearl in pieces alternately of green and white, gives a very charming effect. Mother-of-pearl can also be used in certain rooms in the friezes. The material is by no means as expensive as one might think.

Novelties from Japan.

In the opinion of Mr. G. R. Rigby, who read a paper at Derby on "Stencilling," the work of the Japanese in this line, although very beautiful and ingenious in itself, is unfit for use in the average English house. Some of the products of Japan may, however, be used very successfully for interior decoration. Among them are wood veneers, which are produced in a variety of colours, and may be used in place of wall-paper. The veneers are exceedingly thin, and are backed up with paper. The woods are mostly very beautiful in grain; and, where novelty is desired, these hangings will be found to be very acceptable.

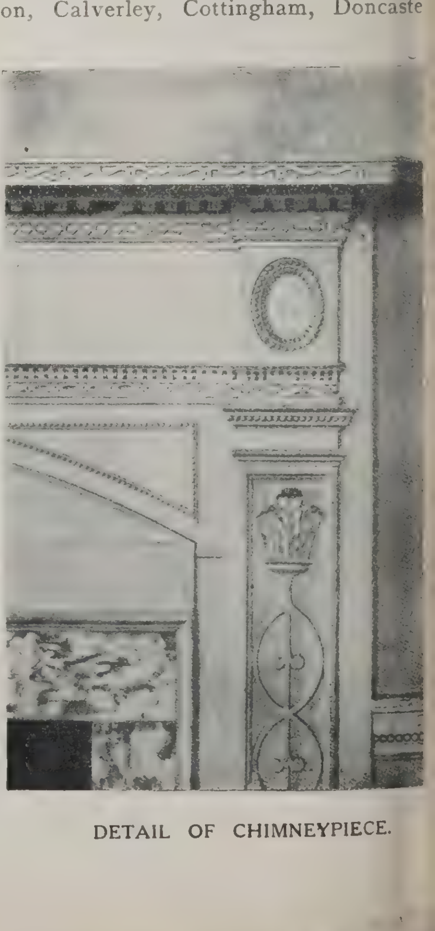
Another novelty, also from Japan, apparently consists of very small pieces of straw pressed down quite flat upon a paper back and coloured in various plain tints. Still another is paper which has precisely the appearance of leather—grain, gloss, and one might say almost the texture as well. The strength of these imitation leather goods is remarkable, and the colours are rich and varied. The firm who import these specialities also show some curious wood cut into very narrow strips and plaited. Some of the strips are coloured; and here again there is a paper backing.

"Silver Paint."

Attention may be usefully directed t
aluminium paint, or "silver paint" as
is sometimes called. The claims for
do not seem to be exaggerated. Th
paint has remarkable "body" or coverin
capacity; and if the quality is really goo
one coat is sufficient for all ordinary pu
poses. It does not change colou
although in a London atmosphere
deposit of dirt will, after an exposure
twelve months or so, require to be r
moved by means of a dampened clot
when the paint will be found to be a
bright as when first applied.

NEW ORDNANCE MAP.

Mr. Edward Stanford, official agent f
the large-scale Ordnance maps, announce
the publication of the first 165 sheets of
new issue on the scale of 50 inches to
mile (1 : 1250). Hitherto, apart from th
town plans, the largest scale on whic
urban districts have been obtainable ha
been the well-known 25 inches to a mil
and the new issue is based on an enlarg
ment of that map. The larger scale ma
has been specially prepared for use pr
marily in connection with land valu
tion, and the area covered by each sheet
one quarter of that of a 25 in. sheet. Th
size of the sheets is 40 by 27 ins., an
the price 2s. 6d. each. The sheets alread
issued are in the undermentioned di
tricts:—Cheshire: Bollington, Chorle
Northwich, Pownall, Poynton; Durham
Crawcrook, Hedworth, South Shield
Hampshire: Aldershot, Alton, Andove
Basingstoke, Bishop's Waltham, Cosha
Emsworth, Fareham, Havant, Ne
Alresford, Odiham, Petersfield, Portse
Portsmouth, Romsey, Southampton, Stoc
bridge, Titchfield, Waterloo, Wh
church, Winchester; Lancashire: As
ton-under-Lyne, Barton-on-Irwell, De
ton, Middleton, Pendelton, Penketh, Pou
ton, Warrington, Winwick, Woolsto
Leicestershire: Market Harboroug
Northumberland: Cramlington; Sussex
Petworth; Yorkshire: Billingle, Bridlin
ton, Calverley, Cottingham, Doncaste



DETAIL OF CHIMNEYPIECE.

ey, Harrogate, Haworth, Kingston on-Hull, Knaresborough, North Bier-, Norton, Ovenden, Pontefract, Sedrgh, Settle, Snaith, Sutton and Stone rry, Thornton, Todmorden, Tong, etherby.

TATTERSHALL CASTLE.

t was stated a few weeks ago this castle s purchased by a wealthy American, o proposed to remove it brick by brick re-erection in the United States. When s announcement was made archæologs in Lincolnshire at once made a public peal for funds to save the valuable eenth-century fireplaces. It was stated it nearly £3,000 was asked for the manpieces and £2,000 for the castle. Major Francis Trippel offered to advance ,000 as a loan, and the National Trust omised to endeavour to raise the money. anwhile the removal of the fireplaces s suspended for a time, awaiting the ult of the appeal. It is now known that castle is saved to the nation, Lord Cur- of Kedleston having bought it. The stle was built about 1440, but on Lord easurer Cromwell's death in 1455 the ates, which had passed into the Cromll family in the fourteenth century, rerted to the Crown. About 100 years er the manor was granted to the Earl Lincoln, and the Fortescue family acired it in the seventeenth century.

The castle is stated to be perhaps the liest and finest example of the revival brick building in England. Not much the original structure stands to day, ext the fine tower, the parapet of which 112ft. above the level of the ground. e fireplaces were of such splendid worknship and design that Pugin studied m for his work in the Houses of Parliant.

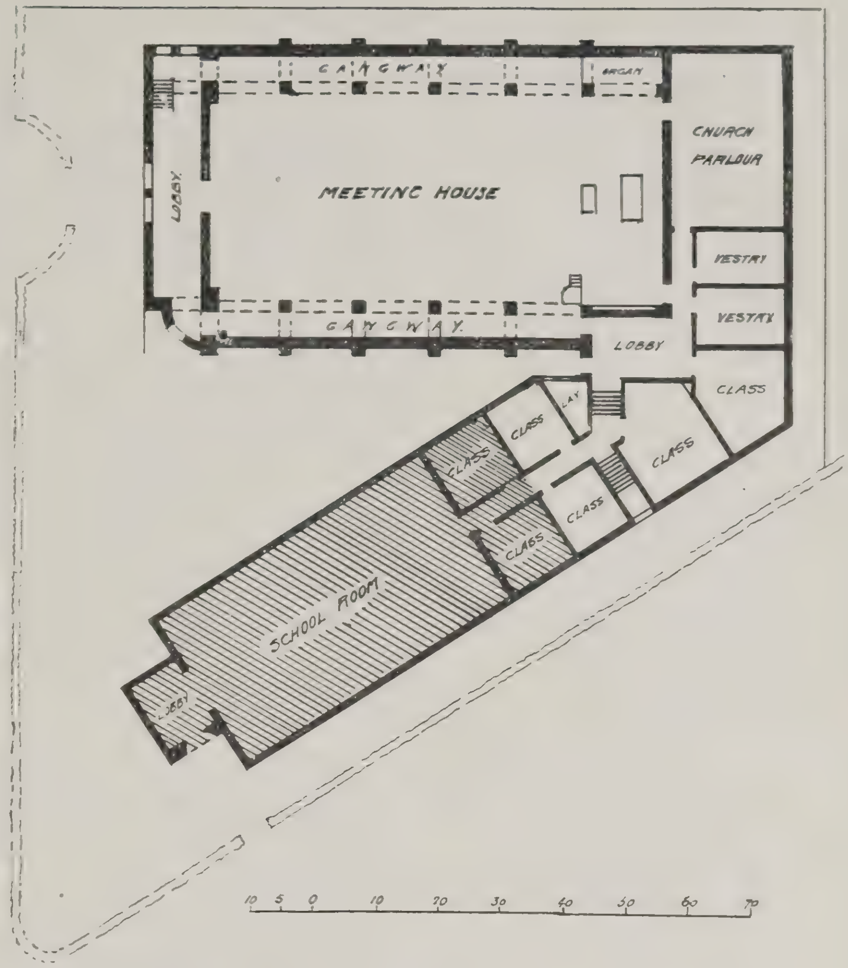
The one in the hall of state, or audience amber, on the second floor, has a row of aldic shields and badges, showing the easurer's Purse, St. George and the agon, and Cromwell and Tattershall paling Deincourt. In what was proby the state bedroom the fireplace has ndrels carved with foliage, and altering with the Treasurer's Purse are the elds of Bernak, Deincourt, Driby, omwell, and Tattershall. The ornantation of the mantel on the fourth or is similar in character.

The mantelpiece on the third floor, ich had been removed before the recent peal was made, was carved with aldic devices of the Lord Treasurer omwell, and his family.

DDITIONS TO MEETING HOUSE, CHORLEY WOOD.

f this building the hatched portion has eady been erected by Mr. Bates, of orley Wood. The main building will built to correspond, and will be conicted of picked London stocks, with gh-cast and Hamhill stone, and will roofed with green slates.

he interior is to have London stock are piers, with beaten lead caps, nd arches, and barrel vaulted roof in te plaster. For colour, the archi- (Mr. Herbert G. Ibberson) proposes have a great mass of purple hanging ind the baptistery, which will be an n marble pool at the extreme end of building.



MEETING HOUSE, BAPTIST CHURCH, CHORLEY WOOD.
HERBERT IBBERSON, F.R.I.B.A., ARCHITECT.

NEWS ITEMS.

New Business Premises, Harrogate.

The front of these new premises, illustrated on page 486 of our issue for last week, is executed in Burmantofts "Marmo," manufactured by the Leeds Fireclay Co., Ltd.

New Outpatients' Department, Paddington Green Children's Hospital.

The new outpatients' department which has been erected at the Paddington Green Children's Hospital, in Church Street, was designed by Mr. Alan E. Munby, architect, of London, E.C., and carried out by Messrs. T. Henwood and Son. The contract sum was £6,540.

Smoke Abatement Exhibition.

The Coal Smoke Abatement Society has resolved to take the lead in the organization of an International Smoke Abatement Exhibition. The following subcommittees have been appointed: (a) Conference committee; (b) Domestic Heating gas, electric, smokeless fuels, general); c) Industrial and Motive Power Plants, Boilers and Accessories; (d) Ventilating and Dust Prevention; (e) Loan Exhibits.

King Edward Memorial Wing, Cumberland Infirmary.

The opening of the King Edward Memorial Wing of the Cumberland Infirmary at Carlisle, last week, marks the completion of the great scheme of reconstruction of the institution, which has cost practically £30,000. The new wing forms an addition to the western wing of the building, being to the west of the extension carried out in 1873. The extension includes two additional wards, a nurses' home, a kitchen block and steam laundry, an ophthalmic and X-rays department, a small chapel, increased facilities for the electric treatment of patients, five new balconies for open-air treatment, a ward where 12 surgical beds will be placed, and a children's ward, in which there are 24 cots. Messrs. J. Burnet and Son, Glasgow, were the architects.

New Baths for Withington.

The memorial stone of new baths for Withington, Manchester, was laid last week. The building, which we infer has been designed by Mr. Henry Price, the Manchester City Architect, will contain two baths, one 75 ft. by 25 ft. wide, and the other 75 ft. by 21 ft. There will be 90 dressing boxes and 31 wash baths. There is an underground storage tank that will allow of the water from the swimming baths being stored till the tiles, brickwork, etc., are cleaned. The estimated cost of the work is £15,000.

The Guards' Memorial to King Edward.

The King was accompanied by the Queen when, last Thursday, his Majesty unveiled the memorial to King Edward in the Guards' Chapel at Wellington Barracks. The memorial consists of glass mosaic covering the rounded roof above the choir stalls, and adjoins the semicircular mosaic on the eastern arch erected by Queen Victoria to the memory of soldiers of the Foot Guards. The scheme of beautifying the chapel, of which the memorial is a part, has been designed by Messrs. Clayton and Bell, and the mosaics have been executed in Venice by Messrs. Burke and Co The new mosaic represents the four Archangels—two on the north, two on the south.

Middlesex County Council's New Court House.

A site for a Court House at Hendon has been offered to Middlesex County Council by the Ecclesiastical Commissioners, and the Council has agreed to pay £600 for an acre of ground situated in the Edgware Road, adjacent to Silk Bridge, over the Silk stream arm of the Brent reservoir.

Connemara Green Marble Quarries.

The company that was formed some time ago to work the green marble quarries of Connemara has issued a prospectus containing information on what it appears is a vast wealth of marble, which underlies some of the mountains of Connemara. Several experts in marble who have examined the deposits all state their belief that the working of these veins of marble can be turned to great advantage.

Quantity Surveyors' Association Examinations.

A preliminary examination for the admission of students and a final examination for those intending to apply for membership of the Quantity Surveyors' Association (Incorporated) will be held in April, 1912. Syllabuses of the examinations and forms of application for permission to sit mav be obtained from the hon. secretary at Caxton House, Westminster, which forms must be submitted for approval by the Council on or before December 9th next.

The Largest Fascias in London.

We are informed that the Brilliant Sign Co. (1907), Ltd., whose offices are at 38, Gray's Inn Road, W.C., have just secured an order for plate glass fascias which, when fixed, will be the largest in London. They are for Palmer's Stores, Ltd., King Street, Hammersmith, and will run the entire length of the four shops. They contain the company's Brilliant letters, which are stamped up out of stout copper from steel dies, measuring nearly 4 ft. deep. The firm are also supplying their "Permenart" fired-on background, which is a new process recently registered by them.

Sir John Simon buys Mr. Garner's old Home.

Sir John Simon, the Solicitor-General, has purchased Fritwell Manor, an estate between Bicester and Banbury, Oxon. The mansion is regarded as being a perfect example of Elizabethan architecture. The late Mr. Thomas Garner, the architect, who was in partnership with the late Mr. George Bodley, devoted much time and money to its restoration. The house, with 12 acres, and the advowson of St. Olave's, Fritwell, has been sold for £7,300 by Messrs. Nicholas, of Piccadilly, as agents for the vendor.

Stained Glass Window, Cupar.

A stained glass memorial window in Cupar Parish Church, to the memory of Mr. Alexander Black and his son, James Roger, shows a design of Our Lord as "The Good Shepherd." Treated in the manner of the thirteenth century work, with as little surface pigment as possible, the colour scheme is laid in tones of deep ruby and green. The window has been designed by Mr. J. Ballantine, Gresham Buildings, Edinburgh.

The Surveyors' Institution.

Lord Alverstone's portrait was unveiled at the Surveyors' Institution last Monday, and on the same occasion the portraits which were presented earlier in the day to Sir Alexander Stenning and Mr. Daniel Watney (past-presidents) were given by those gentlemen to the Institution.

The Widening of Fleet Street.

It is expected that the widening of Fleet Street, which has been many years in progress, will be completed within six months. The Corporation has recently acquired one of the remaining freeholds for £42,000. The whole widening will have cost £440,000, of which the London County Council will contribute £200,000. The width of the thoroughfare throughout its length will be 60 ft. It is noteworthy that the congestion of traffic in Fleet Street, which was the reason of the widening, has now virtually ceased, owing to the increased use of the Thames Embankment for motor and light-horse traffic.

The Progress of Liverpool Cathedral.

Sir William Forwood presided at a meeting of the Liverpool Cathedral Committee last week, when the financial sub-committee reported that there were sufficient funds in hand to complete the choir, vestries, chapter-house, and Lady-chapel, but they now required to raise £70,000 to build the first of the transepts, which will increase the seating accommodation to 2,500. The committee accepted the designs of Mr. G. Gilbert Scott, the architect of the Cathedral, for the carving of the porch to the Lady-chapel. It was reported that the committee had been made the residuary legatees under the will of Miss Willox, sister of the late Sir John Willox, of Liverpool, and that the late Mr. Gardner had left £1,000 for a window in memory of Alderman R. C. Gardner, a former Mayor of Liverpool.

A Proposed Imperial Hospital.

For some time it has been felt that more adequate facilities than those provided in private nursing homes are required for dealing with the large number of patients coming to London from the provinces and from Overseas Dominions for operations. The necessary capital, £18,000, has now been subscribed for the erection of a building to accommodate a well-equipped institution which is to be open to the public at moderate charges. Provision is to be made in the first instance for 40 beds, but the building will be so constructed that additional floors can be added at any time at a minimum cost. The superficial area of the site (acquired from the Ecclesiastical Commissioners on a lease of 999 years) is 6,300 ft., and the hospital will have a south-west aspect, with a frontage of 60 ft. to Vincent Square, and to Rochester Row at the back, and 105 ft. to Vane Street. The secretary of the scheme is Mr. G. S. Tice, Caxton House, Westminster.

New Chapel at Worksop College.

The chapel which, at a cost of £10,000, Lord Mountgarret has added to Worksop College was dedicated last week by Dr. Hoskyns, Bishop of Southwell. It is a red-brick building, treated in free Gothic with stone dressings and traceried windows to harmonise with the rest of th college. Externally it is divided into si bays with two lofty turrets to mark th east end, which is further accentuated b a large niche, containing a figure of S Cuthbert placed in the upper part of th east gable. The chapel is approache from the east side of the school buildin through a large ante-chapel and wi accommodate 40 boys. Internally it i finished in plaster with brick bands abov an oak dado and covered with an oa dado painted and decorated timber barr ceiling. The chancel has a stone vaulte roof, and the whole internal effect de pends upon its great height and gracef proportions. The total length, includin the ante-chapel, is 128 ft., the width 36 ft and the height to the apex of the ro 56 ft. Sir Aston Webb, C.B., R.A., is th architect.

New Scheme for City Street Lighting.

After prolonged experiments and i vestigations the Streets Committee of th Corporation, states the "City Press," ha agreed upon what may be regarded as th final scheme of street lighting in the Cit and it will be laid in detail before th Court of Common Council at an ear date. It is understood that the schem provides for the use of both gas and ele tricity in almost equal proportions. A far as possible the lamps will be central hung, in a manner made familiar durin the experiments. The type of gas lam finally selected is that to be seen at th King William Street end of Canno Street. As regards electricity, the kind lamp recommended is that to be seen the St. Paul's Churchyard end of Chea side In streets where centrally hun lamps would be impracticable or inco venient resort will be had to bracket except in cases where these, too, would difficult to fix. Where it is not possib to have either suspended lamps or bracke standards will be used, but every effo will be made to dispense with them. is stated that if the scheme is carried in full effect there will be an increase nearly 50 per cent. in the illuminati power, and at the same time a saving many thousand pounds a year in the co of public lighting.

International Road Congress.

A meeting of the representative gener committee which has been formed undertake the organization of the Inte national Road Congress to be held London in 1913 was held last week at th offices of the Road Board. Sir George Gibb presided. There was a large atten ance of the members of the general con mittee representing the various associ tions interested in the improvement the roads. M. Mahieu and M. le Gavria of Paris (the secretary-general and assi tant secretary of the International Ass ciation of Road Congresses), were al present. An executive committee wa appointed as follows: Sir G. S. Gibb chairman; Lord Montagu of Beaulieu, M W. Joynson Hicks, M.P., and Mr. F. Beryman (County Councils Association vice-chairmen; Sir Charles D. Rose, M.P treasurer; and Messrs. J. A. Brodi M.Inst.C.E., H. P. Boulnois, M.Inst.C.E Dugald Clerk, F.R.S., E. Manvill M.Inst.C.E., M. Fitzmaurice, C.M.G., Shrapnell Smith, John Kennedy, J.P D.L., S. Williams, H. P. Maybur M.Inst.C.E., and Colonel R. E. Crom ton, C.B. Mr. W. Rees Jeffreys wa elected hon. general secretary of the Co gress, and Mr. G. Montagu Harris ho deputy general secretary.

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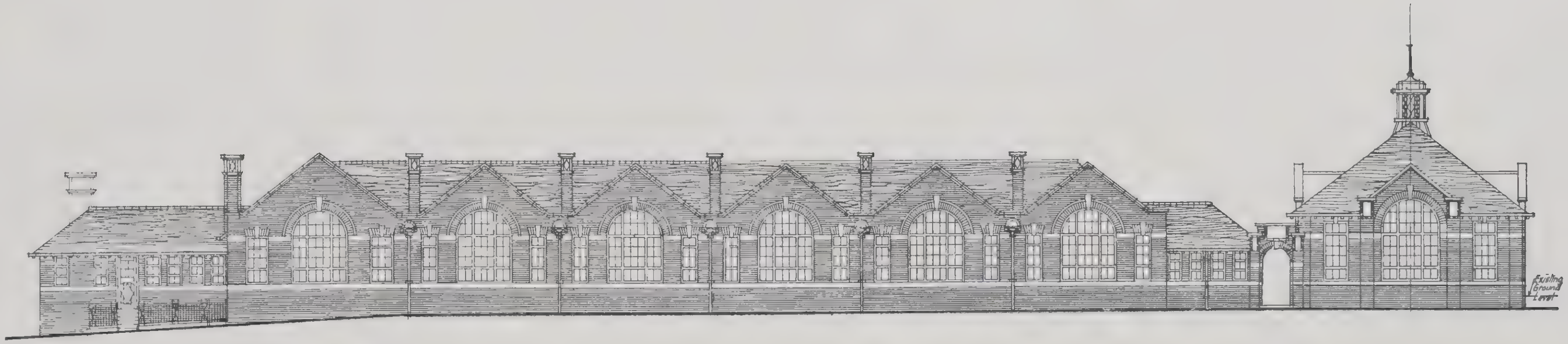
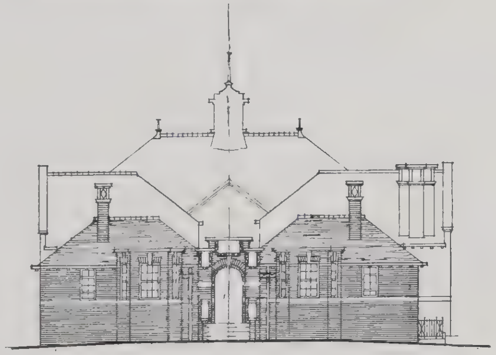
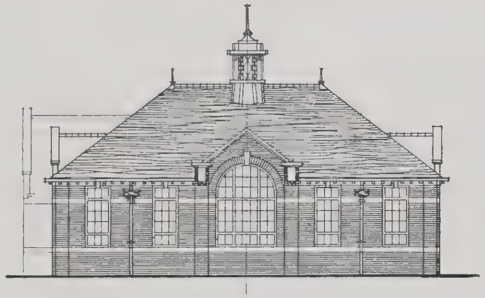
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, November 22nd,* 1911.



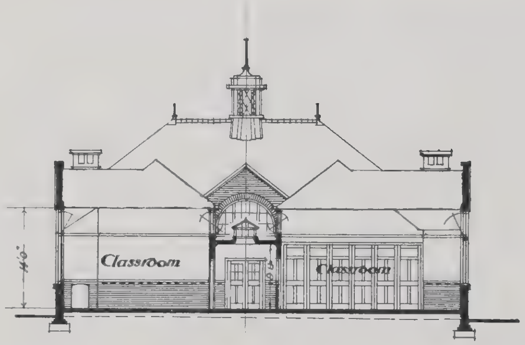
: East Elevation :



: South Elevation :

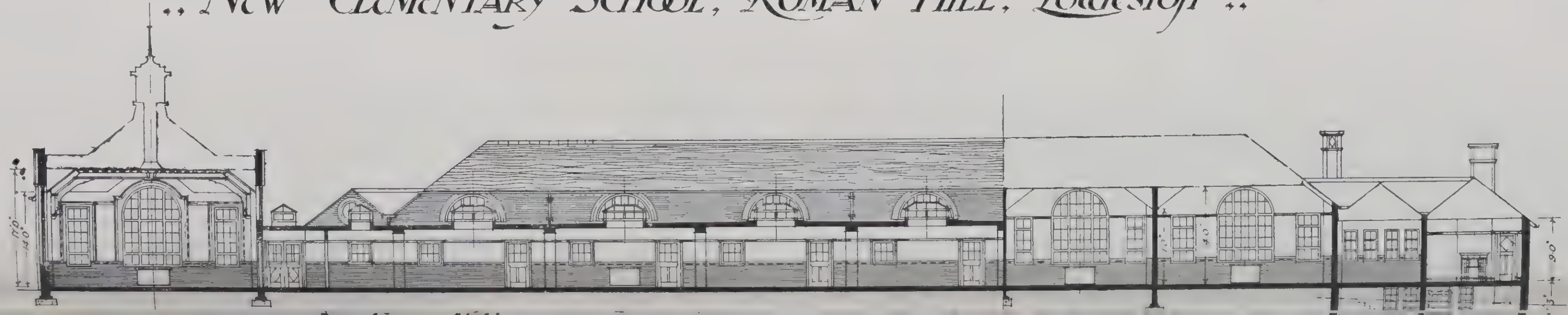


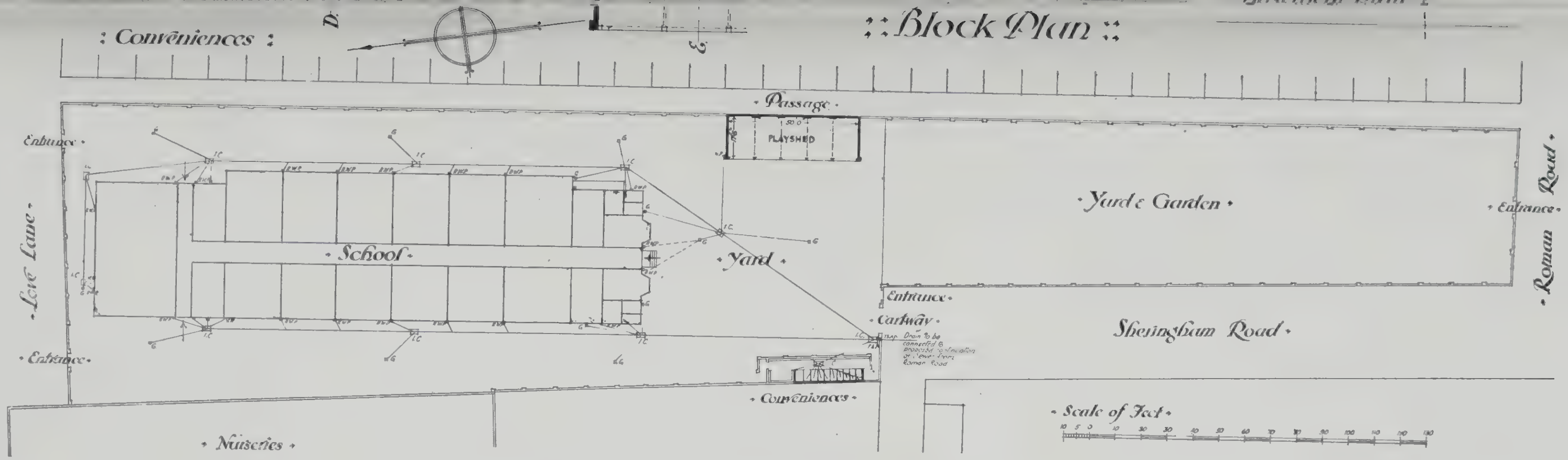
: North Elevation :



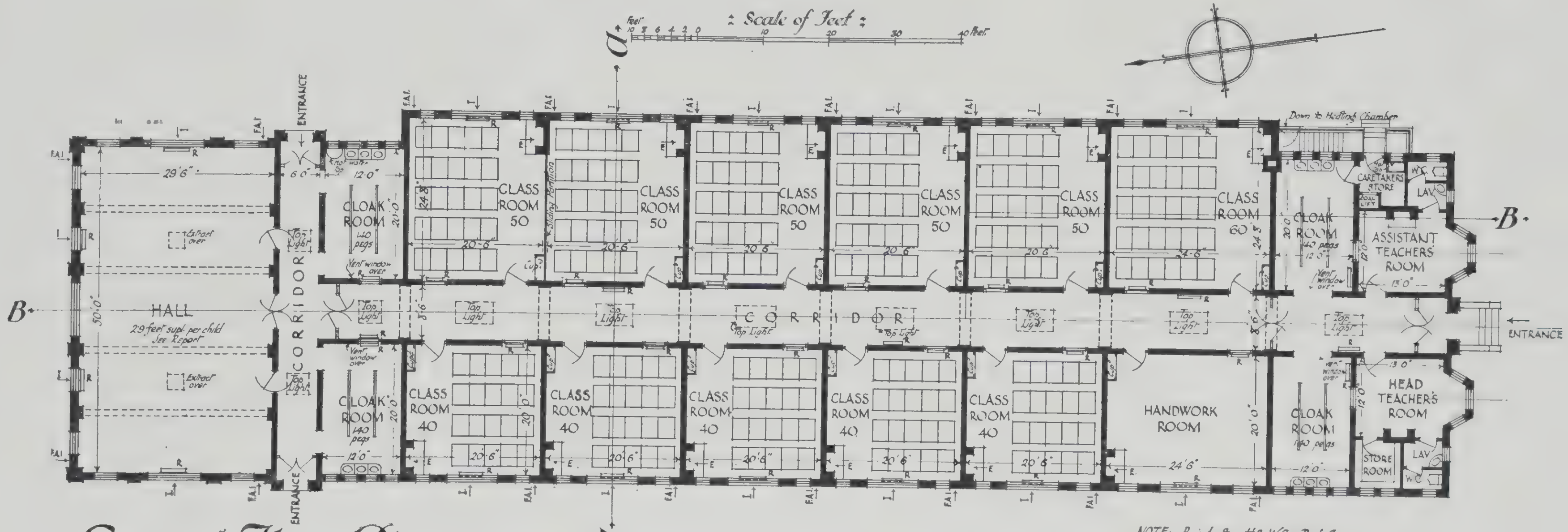
: Section AA :

:: New Elementary School, Roman Hill, Lowestoft ::





:: Block Plan ::



:: Ground Floor Plan ::

NOTE:– R indicates Hot Water Radiator
I " regulating Fresh Air Inlets behind Radiators
F.A.I " " " " " 6'0" above floor.
E " " Foul Air Extracts into air flues over.

SELECTED DESIGN. BRYAN AND HODGES, A.A.R.I.B.A., ARCHITECTS.

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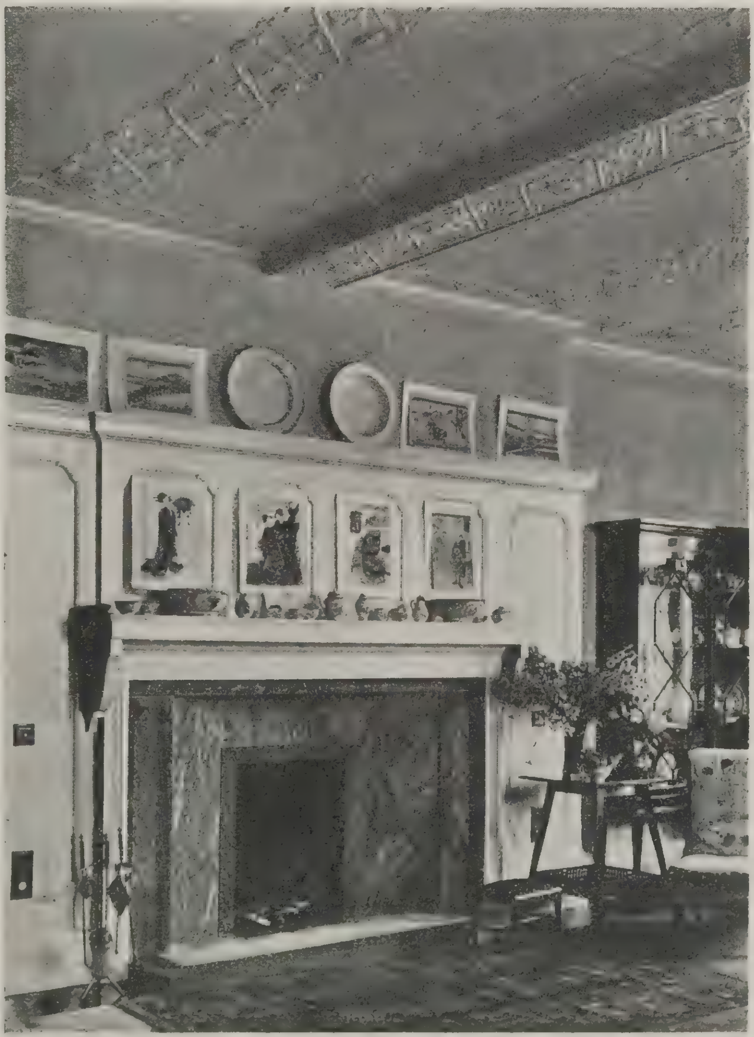
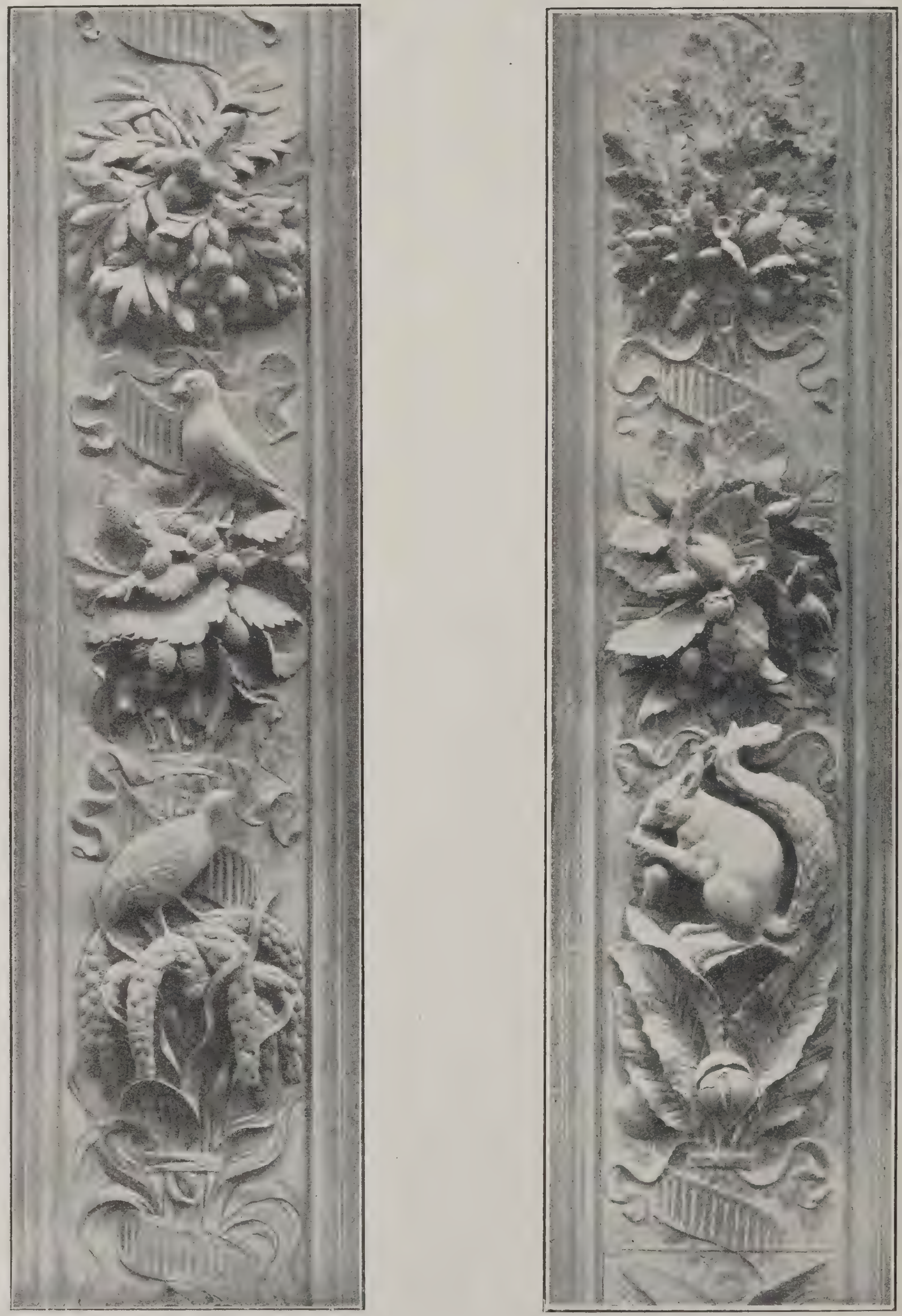
THE ARCHITECTS' &
BUILDERS' JOURNAL.

WEDNESDAY,
NOVEMBER 22nd, 1911.

Volume XXXIV. No. 878.



DRAWING-ROOM CHIMNEYPIECE "GREAT ROKE," WITLEY, SURREY.
BUCKLAND AND HAYWOOD-FARMER, ARCHITECTS.



DETAILS OF BRONZE PANELS TO THE DOOR OF THE BAPTISTERY FIRENZE.
BY GHIBERTI.

THE ARCHITECTS' & BUILDERS' JOURNAL.

NOVEMBER 22nd, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 878.

NOTE : The List of Contents will be found on page IV. of the front advertisements.

The Lighting of the National Gallery.

AS to the lighting of the new rooms in the National Gallery there has appeared lately in the daily papers a good deal of criticism, which is not without point, although asserted evil of the result has been a little exaggerated. visiting the new rooms when first opened, we were struck, everyone we think must have been, with their abundance clearness of light, and we observed at the time that some the pictures, in their new position in these rooms, had ined quite a new and unexpected effect. What is now com- ined of is that the lighting is in one sense too good; that skylights in the middle of the ceiling throw so much light the centre of the room that the objects there, and more ecially the figures of the spectators, are more strongly minated than the pictures themselves; that the reflections ch are unavoidable in glass-covered pictures are thereby nsified, and that it is difficult to see the pictures at all in sequence. We have made a visit to the Gallery on purpose xamine into this, and find that this defect does exist to nnoying extent, though hardly to the extent, as has been rted, of rendering enjoyment of the pictures impossible. suggestion of a correspondent in the "Times," Mr. eson, that the lighting ought to have been by lantern lights vertical glass, is right; the light in that case is directed rds the pictures on the opposite wall, each way, and not ically on to the centre of the room. But this only applies e case of permanent galleries where the pictures have to ept under glass for their preservation. It would not apply alleries built for annual exhibitions where the pictures not under glass, and therefore need not be taken as an lute principle in the designing of picture galleries. For general purpose of getting a good clear light, a skylight obably the best there can be, and if the National Gallery ures were not glazed the new galleries would probably be gnised to be as well lighted as could be desired. The al architect seems to have overlooked the effect of ceiling on the glazing; while the critics seem to have overlooked fact that all galleries do not contain glazed pictures, and claimed as a general rule what is only a requirement for ial circumstances.

he National Gallery rooms, having been constructed at rent times, are lighted on two or three different methods. thing which they certainly prove is that the light should come through one thickness of glass. E. Barry's method, e rooms which he built, was to have an outer skylight of sual slope, and to ceil the room with a flat glazed ceiling r this, as in the large Italian room (Gallery VII.), or with sidiary curved and glazed ceiling, as in Gallery IV. and which correspond to it. It will be found, on comparison, the light in all these rooms is rather dim, though there is dvantage of having less prominence given to the reflec- . Gallery VI., containing the Umbrian school, has a lantern giving both vertical and top light, but very high above a large cove rising from the cornice; the lighting is room is very good and clear, and the reflections are not y so prominent as in the new rooms, probably because kylights are much further from the floor. The ceilings e new galleries are much lower, and the skylights consequently nearer to the floor, making too much strong light in the centre of the room.

It is suggested that the disagreeable effect of the reflections in the new rooms might be diminished by having a horizontal textile screen fixed over the central portion of the rooms; but if this is tried, an experiment had better be made with one of the rooms first, before it is adopted permanently for the whole. We rather doubt whether people would be pleased with the result. At the Franco-British Exhibition the French Galleries all had a screen of this kind drawn across them under the skylights, and the result was that the lighting in the French rooms seemed dingy and unsatisfactory in comparison with the English rooms.

It is well, however, that attention should have been called to so important a point in the lighting of picture-galleries, but it must always be remembered that there is a difference between glazed and unglazed pictures.

Alfred Stevens.

WE sympathise entirely with the admiration for Alfred Stevens which has led to the presentation of a memorial bust of him to the Tate Gallery, but we are not sure that we can quite agree with all that was said on the occasion. Stevens was a great and a very earnest artist, the grand and monumental character of whose sculptural work everyone must recognise; but his style certainly was to some extent a conscious adoption of the manner of Michelangelo, if not in the Wellington monument, at all events in the Dorchester House chimney-piece, the figures on which, though grand in manner, do not seem to belong to nineteenth-century art. Perhaps it may be replied—"So much the worse for the nineteenth century," and the reply would not be without point; but nevertheless there is a rather conscious adoption of a great manner which makes the figures impress one as a little unreal. Then it is all very well to say, as Sir W. Richmond did, that Stevens had the merit of perceiving (in Michelangelo's formula) that "there is but one art," and setting an early example of the "Arts and Crafts" ideal that the art of design includes all classes of work alike; but that does not prevent the fact that some of the detail of the architectural portion of the Wellington monument is not at all good, as architectural detail, and that the result would have been better if he had been compelled, as in France he would have been, to employ an architect as collaborator in that part of the work, and concentrated his own genius on the modelling of the figures. As to the greatness of those, at all events, there can be no question.

A Hint for Brickmakers.

IT has happened not infrequently that the accidentals of scientific research have been of more value than the main issue. There is just a bare possibility that Dr. E. G. Acheson's attempts to adopt clays as binding materials for graphite may turn out to be of great importance to manufacturers of bricks, tiles, terra-cotta, and other earthenware. In his paper read before the London Section of the Society of Chemical Industry, Dr. Acheson said that in the course of his investigations he had been led to consider the difference between residual and sedimentary clays, since it appeared improbable that the mere fact of suspension in water could account for the superiority of the latter. He therefore tested the effect of various organic substances dissolved in water with the idea of simulating the effect of those washed from forests into rivers. The point for earthenware manufacturers seems to be that treatment of clay with dilute solutions of gallotannic acid greatly reduced the quantity of water required to produce a given degree of fluidity, while tensile strength and plasticity were increased. It was found that the tannin was removed from solution by the clay, and that the strength of briquettes formed by clay so treated was more than 200 per cent. greater than that of the same clay untreated. The use of straw extract (suggested by reading Exodus v. !) was found to yield equally good results. It was found that clay thus treated with organic matter became deflocculated. Flocculation of particles suspended in the deflocculated state was caused by electrolytes, such as acids, salts, alkalis, etc. This fact furnished some explanation of phenomena such as the formation of mudbanks and deltas at the mouths of rivers. Here the sea-water had an action bringing about "the union of small particles into granular aggregates or compound particles," which was the author's definition of flocculation, deflocculation being the reverse of this. The chemistry of brickmaking may or may not be enriched by this item; but it seems certain that the real reason of even so simple a phenomenon as that of clay becoming plastic by the agency of water is not quite clearly understood. In Dobson's treatise it is thought not improbable that the water-particles diffused through the material may act—in some manner as yet imperfectly understood—as a kind of lubricant, causing the minute solid and rigid particles to slip over each other as it were upon liquid rollers; and it should be added that Dr. Acheson's experiments led to the production of two useful lubricants, which he calls "Aquadag" and "Oildag." Whether or not brickmakers and the like may find in this information any suggestion of improved practice, it may at least serve to stimulate enquiry.

La Bagatelle, Paris.

A MOST interesting article on La Bagatelle, Paris, finely illustrated by photographs and drawings, is one of the special features of THE ARCHITECTURAL REVIEW for November. Mr. Patrick Abercrombie, the writer of the article, tells how the Comte d'Artois, Louis XVI.'s younger brother, made a bet in 1777 with Queen Marie Antoinette that, in two months, he could rebuild the little château which formerly occupied the site, and create an Anglo-Chinese garden there. Poste-haste he found Belanger as his architect, and Blaikie as his garden schemer. In forty-eight hours Belanger had completed his design and put it in the builder's hands. How long Blaikie took to get out his design, or whether he flung himself unpremeditated upon the virgin Bois, we do not know. One great difficulty was the sudden provision of the requisite building materials; but under the *ancien régime* this was easily overcome—the Comte merely gave orders to the Swiss Guards to patrol the streets and watch the city gates, to seize any wagons laden with suitable materials, and direct them to the Bagatelle! The value of the material was paid on the spot, but without much discrimination as to whom it really belonged; the *ancien régime* was growing rather too decrepit for such pranks; the public of Paris was revolted. D'Artois won his bet of 100,000 francs, but Bagatelle had cost him one million two hundred thousand—equivalent today to three million francs (£120,000). All he had to show was a minute house or casino containing, on the ground floor, one fine circular saloon, two oval ones, and two small square cabinets, and two bedrooms on the first floor lit by square attic-windows—a mere *pied-à-terre*.

The house and its immediate setting were probably co plete in time for the Queen's return, but we can hard imagine that Blaikie's garden can have been oth than raw, although of course he had the existing wood work upon. Though the actual construction of the hou was so rushed, the exterior detail possibly showing signs hurry, there is no feeling of this sort about the interior finis ings. They have the exquisite, refined, and apparent leisured detail of the Louis Seize period, and are all the wo of famous decorative artists of the day; the panels bei painted by first-rate artists, including Hubert Robert.

For the next five years Bagatelle was at its zenith; gradually, as the Revolution gathered head, d'Artois relax his frivolities, and in 1789 he fled to Turin. During t Revolution, the first Empire, and the Bourbon Restoratic the architectural history of Bagatelle was at a standstill, exce for the inevitable wear and tear and decay owing to qui changes of occupation—as a restaurant and public amuseme haunt, the spring residence of the little Rois de Rome, a again in the hands of Comte d'Artois, soon to become Char X. of France, and so cured of his youthful follies that caused all the gay decorations which had escaped the han of creditor and tenant to be whitewashed over.

The third period of the Bagatelle now begins. The fi was the original château, the second the Folie d'Artois, third the Marquis of Hertford's residence. In 1835 the la named bought the domain in public auction for the sum £12,524; it had for some reason or other become alienat from the Crown property of the Bois de Boulogne. Boug first probably as a whim, the little place fascinated the M quis as he began restoring it (for it had fallen into woe decay, owing to its hasty construction and the proximity the Seine), until he made it his headquarters.

The Marquis died in 1870 and left Bagatelle and all unentailed property to his natural son Sir Richard Walla who died twenty years later. The alterations made by fat and son may for convenience be considered together; fortunately, though they were carried out with perfect tas they can hardly be otherwise than regretted, except in so as their restorations prevented the total decay of the hou The Marquis of Hertford, among his other alterations, rai the whole of the upper storey, including the dome, and ad a blind attic, though there can be no doubt but that this rais of the little château has robbed it of much of its intima

In 1904 the property was bought for £260,000 by Council of the City of Paris, by whom it is now maintain

In the same issue of the REVIEW are illustrated articles the Tower of London, Saracenic vaulting, three Wells ga ways, and Roland Park, Baltimore—an American gar suburb; while "Current Architecture" includes the North Conservative Club, Newcastle-on-Tyne, and the Whitley Pleasure Buildings (Messrs. Cackett and Burns-Dick, arc tects), the Students' Union, Liverpool (Professor C. H. Rei architect), His Majesty's Theatre, Manchester (Mess Horace Farquharson and Richardson and Gill, associa architects), and a fald-stool for Quebec Cathedral desig by Mr. Mervyn E. Macartney.

Builders and Education.

IN a review of the educational facilities of London, writer in the "Standard" observes, with respect the Goldsmiths' College at New Cross, that the gineering and building departments are only carried on th pending the provision of an engineering and building sch in the neighbourhood by the London County Council. T is good news so far as it goes. The Council deserves ev credit for the perseverance with which it is gradually build up a system of technical education, and especially for attention it is giving to the building trades. In almost ev quarter of London there are classes in which, for very l fees, more or less efficient instruction in most branches of ustry is given. But these more or less isolated units seem equire more effective co-ordination into an organic system. e study is at present too casual and desultory to ensure the t results of effort. Employers should be more fully and ely consulted as to the educational needs of their particular ustries. They should be asked to form an educational rd, which, duly leavened with educational experts, should competent to formulate a comprehensive scheme of educa- , and to offer sufficient inducements to young craftsmen ursue it with diligence and hope. Science is nowadays ntial to every calling, not excepting that of the builder, , however, is much worse off than, for instance, the ineer, in the means of pursuing it. The whole matter of training of craftsmen is at present in the melting pot; there is therefore all the more reason for builders to look t that, in the recasting, their interests shall not be unduly ected. They should organise their forces accordingly; now is the accepted hour for doing it.

The Cheaper Schools Movement.

HE Denbighshire authority, at a recent meeting, considered a report by the county architect, Mr. W. D. Wiles, with regard to the styles of temporary buildings e erected in various parts of that county. According to "Manchester Guardian," Mr. Wiles stated that he has ntly had consultations with the Board of Education ials on this subject. It appeared to him that one of the forms of semi-permanent buildings was that of the school it to be erected at Broughton Pentre. This is to be on nanent brick or stone foundations. The superstructure be wood-framed, lined inside with three-quarter inch chboarding, and outside with one-inch thick weather ding, with a layer of bitumen hair-felt between the in- r and exterior surfaces. The roof will be formed of d and covered with blue Welsh slates, and the building be heated on the low-pressure hot-water system. Such a ding as this Mr. Wiles estimates as likely to have a life o to 50 years, and he is of opinion that the Local Govern- t Board would sanction loans for 25 years for this class uilding. As far as he has been able to ascertain such dings would cost about half the cost of the usual per- ent buildings erected by the authority, which has been to £18 per child accommodated. When the Broughton re school is erected the Education Committee, Mr. Wiles ted out, will have an opportunity of judging the merits of types of semi-permanent school buildings which have erected within the county, namely—(a) those of the per character, constructed of wood and galvanised iron, as Maengwynedd school, having accommodation for 50 costing for superstructure slightly over £3 per head; he Broughton Pentre Girls' School, which accommodates and the superstructure of which cost £2 3s. per head; e New Broughton schools, on the same lines as the latter, made to the architect's specification of better materials, d on the low-pressure hot-water system, and costing for rstructure about £4 per head; and (d) the ideal semi- nanent building proposed to be erected at Broughton re, already described. The first two classes of building Wiles does not recommend, except for emergency use. inter the heating by stove in them is very unsatisfactory, n summer the buildings get unbearably hot. In advising ommittee to prefer the fourth class of building, such as ut to be erected at Broughton Pentre, Mr. Wiles pointed at the schools built in the early days of the school boards hose built previously by the Church of England are all f date for present-day class teaching, and it is just ble that 25 to 30 years hence the present buildings, now d upon as ideal structures for schools, will also be out ate. Another consideration weighing in favour of a of erecting semi-permanent buildings, in addition to ving in cost, is that the eastern part of the county is so undermined with coal workings that in some cases it would be unwise to erect permanent structures. Furthermore, school requirements continue to vary. In some of the country districts schools built by the school boards to meet requirements at the time of erection are now too large for the present population. For instance, at the Llanarmon Dyffryn Ceiriog School, recognised as having accommodation for 86 children, the average attendance is only 33; and the Pontricket Council School, recognised for 91, has an average attendance of only 25. The Committee received the report and, acting on the architect's suggestion, decided to defer the question as to which of the four types of semi-permanent schools it is desirable to adopt until the Broughton Pentre School has been completed.

Costly Litigation.

A WEEK or two ago we commented upon the costliness of litigation as exemplified in the case of Minter v. Waldstein, of which particulars have already been given. Mr. Clavell Salter, K.C., has since made, in the King's Bench Division, an *ex parte* application which afforded a further revelation of the heavy expense of protracted legal proceedings. It will be remembered that the case, which was brought by a builder to recover the balance of about £3,000 alleged to be due to him on a building contract, had been heard before Mr. Muir Mackenzie as Official Referee, and that the proceedings had occupied 38 days. The shorthand note of the hearing, Mr. Salter said, had already cost about £1,200, and he now applied on behalf of both parties that they might be allowed to come to the appeal without going to the further expense of providing transcripts of the Official Referee's note, which had filled eight volumes. Usually, no doubt, the best and cheapest course was to have a transcript of the note of the Judge in the Court below, but in this case he asked that the appeal should be heard on the shorthand note alone. Mr. Justice Darling said that they would have the original note of the Referee before them when the time came, and a transcript need not be made. We can make no comment upon a case that is subject to appeal; but there is no breach of etiquette in expressing the opinion that this case is only one out of many that illustrate the urgent need for simplifying the machinery of equity. If litigation were less costly, it would probably be more abundant; but at all events it ought to be possible to establish a right without sinking a fortune. The attempts of chambers of commerce to solve the problem of cheaper justice do not seem to have met with much success; and such a drastic reform of legal procedure as would in every case ensure the successful litigant against losing much more than he gained seems to await the social earthquake towards which it is to be feared the present extravagant legal system is contributing a good deal of explosive material.

The Wesleyan Hall.

IN our issue for September 13th we published certain of the detailed drawings of the dome of the new Wesleyan Hall at Westminster. Being under the impression that these were the engineers' detailed drawings, we obtained them from the engineers for the purpose of publication. Messrs. Lanchester and Rickards, the architects of the building, have drawn our attention to the matter, and they consider that the drawings ought not to have been published without their consent. Although we do not personally agree that such consent was legally required, we certainly should not, as a matter of professional etiquette, have published the drawings without the consent of the architects had we known that they were not aware of the proposed publication. Messrs. Lanchester and Rickards have met us with the utmost courtesy, and, as they have refused our suggestion of any payment to themselves, we have, with their approval, sent a contribution of £20 to the Architects' Benevolent Society.

THE CASE FOR REGISTRATION RE-STATED.*

BY GEO. E. BOND, J.P.,
President of the Society of Architects.

The most gratifying feature about my re-election as President for the fourth consecutive year is the confirmation of my belief that you are in sympathy with the policy which your Council and myself have been advocating (in view of a united profession) in regard to Registration.

The Registration Bill.

At present, only the general principles of a Registration Bill have been considered and agreed between the representatives of the Society and the Royal Institute, and much arduous labour and thought will be entailed before its details are ready for presentation, but if the members of the Joint Committee to whom the duty of the drafting of the Bill has been delegated can be fully assured of the sympathetic and reasonable support of the members of their respective general bodies they will be encouraged to proceed, and to devote their best energies to the drafting of such a measure as will, when completed, satisfy a very large majority of the profession.

The general principles of the Bill as drafted are those already laid down in the Society's Bill, and make provision for the recognition of all vested interests (which would in any case be insisted upon by Parliament). Consequently all persons who can prove that they are *bona-fide* practising architects at the time that the Bill becomes law will be entitled to continue that practice during their lifetime.

The first effect therefore of a Registration Bill will be to prevent any further addition of the unqualified to the ranks of those already practising, and the latter will, by the natural process of elimination, gradually die out, and this will necessarily be a matter of time.

The second effect will be that none but those who have been properly educated and who possess the necessary qualifications and are able to prove them, will be admitted to practice, and as this is a matter which will affect the younger generation of architects, it is obviously chiefly a question for them.

Does the Profession Desire It?

It is therefore pertinent to enquire whether they desire Registration by Act of Parliament. A plébiscite instituted by this Society has proved that eight out of nine members of the architectural profession desire Registration, and it is fair to assume that very few young men voted with the minority, and that of these there were none who had spent years of arduous study and preparation for passing qualifying examinations; for these, speaking generally, are the chief sufferers under the present system, or rather want of system. There are many young men on whose education and architectural training considerable sums have been spent,, and who possess every qualification to practise architecture; who are obliged to remain in the position of assistants at about the average wage of a bricklayer, or who are even unable to obtain regular employment, simply because the profession is overcrowded, and there is consequently keenness of competition, so that the remuneration of the competent is kept down by the competition of the incompetent.

The Incompetent Assistant.

You may further have observed that the more incompetent a young man may be, the more likely he is to commence practice for himself at the earliest possible moment. If he has been found worthless by his principal during the period of his apprenticeship, the result is that he is advised to try a change immediately the time expires, and if other architects find him equally incompetent as a junior assistant, his only course is to open an office of his own. It then frequently happens that some indiscriminating member of the general public (who has no conception of the duties of an architect), actuated by the desire to do the young fellow a good turn, or more probably because he hopes to get his work done for a small fee, gives him some small commission, and, generally speaking, the completed work is so unsatisfactory that the client resolves never again to trust a young architect, and his reasons are made known very freely to his friends and neighbours. The competent therefore suffer with the incompetent, and the small commission which the qualified young architect would like to have an opportunity of carrying out, and which he could do in a manner calculated to secure further and more important commissions, is withheld, and probably given to a builder's clerk or foreman, who, although he may not have any knowledge of art or even draughtsmanship, will generally give his client what he expects at a reasonable price. It sometimes happens, however, that these incompetent young men have wealthy connections, or it may even be that their incompetence is the direct result of the knowledge of the fact that they will not be entirely dependent on their work for a livelihood, which knowledge makes them careless and negligent in their student days. I know instances where such young men, having been given good opportunities, have, with the aid of "ghosts" whose services they could afford to pay for, further assisted by good builders whose general foreman has been subsidized, turned out creditable work which has earned for them fair reputations, and they are now able to employ qualified assistants who are practically responsible for every detail of the practice, except when it becomes necessary to exhibit a figure-head, and they will no doubt continue on these lines for years, securing remuneration which rightly belongs to better men. The presence of such persons in the acknowledged ranks of the profession is a grave injustice to the earnest and thoughtful young architect who has devoted much time in acquiring a thorough knowledge of every branch of his profession.

The Virtues of Examination.

There are probably some thousands of young men in the United Kingdom serving their articles at the present time not an eighth of whom will ever attempt to pass any qualifying examination, and of whom a large proportion will go to swell the ranks of the incompetent, and thus depreciate to a great extent the general standard of ability, and discredit the profession generally in the eyes of the public. A preliminary entrance examination would reduce this number by at least one-half, while another fourth would be eliminated by an intermediate examination, and I am confident that every young man who has, after years of study, proved
efficiency by successfully passing a
qualifying examination must feel that
time has arrived when his competi
must be compelled to submit themse
to a similar test before being allowe
practise,

My personal observations and ex
ence have shown me that the overcro
ing of the profession and the unfair c
petition to which qualified men are fo
to submit is the direct result of the l
influx of incapable and incompetent
sons into the ranks of the profes
through the ordinary portals of pupil
rather than the presence of those o
undesirables who combine the practic
architecture with some other callings.
they are dependent on architecture
their livelihood and are without mean
influence, their only chance of secu
even that class of work which does not
for either great skill or artistic meri
to offer inducements by way of redu
fees, by this means obtain employm
and frequently to compensate themse
for this they will adopt very undign
expedients.

Examination and Registration Polic

To sum up, I would point out that
the fully qualified young men commen
practice who have to bear the brun
unfair competition, therefore it is obv
for reasons already stated that it is
sumably the young men who will speci
desire to support the Registration pol
which, if successfully carried through,
check such competition, and at the s
time raise the status and general stan
of practice in the profession.

This will be effected by the institu
of examinations so graded as to firs
all test a candidate's general knowle
and aptitude for acquiring professi
qualifications, followed by a further
amination, by which means the
would be eliminated, leaving only
capable, to hope that by the exercis
their talents, combined with strenu
and persistent study, they may pass
final test and thus qualify themselves
practice. Such examinations will
merely shut out the incapable in the e
stages of their attempts in finding a car
but the knowledge that such examinat
have to be passed would have the fur
effect of compelling the idle and care
but talented young men to dilige
apply themselves in the early days to
task of making themselves proficient,
would encourage all those qualities
that time in their lives which would t
to the ultimate benefit of themselves
their clients.

The Joint Sub-Committee.

Assuming, therefore, that the yo
men are convinced that the Registra
Policy is a really practical attempt
solve their difficulties, and that its
cess is extremely desirable, I ventur
point out that the only possible cha
of carrying it through will be by earne
supporting the combined Registra
Sub-Committee and approving the ag
ment to be entered into between the
ciety and the Royal Institute. Let
consider the situation. For more tha
quarter of a century we have been acti
and strenuously advocating a Registra
Bill, but the only practical, though v
important, result has been that the
fession generally has been educated
appreciate the benefits of such a pol
During all this period we have persiste

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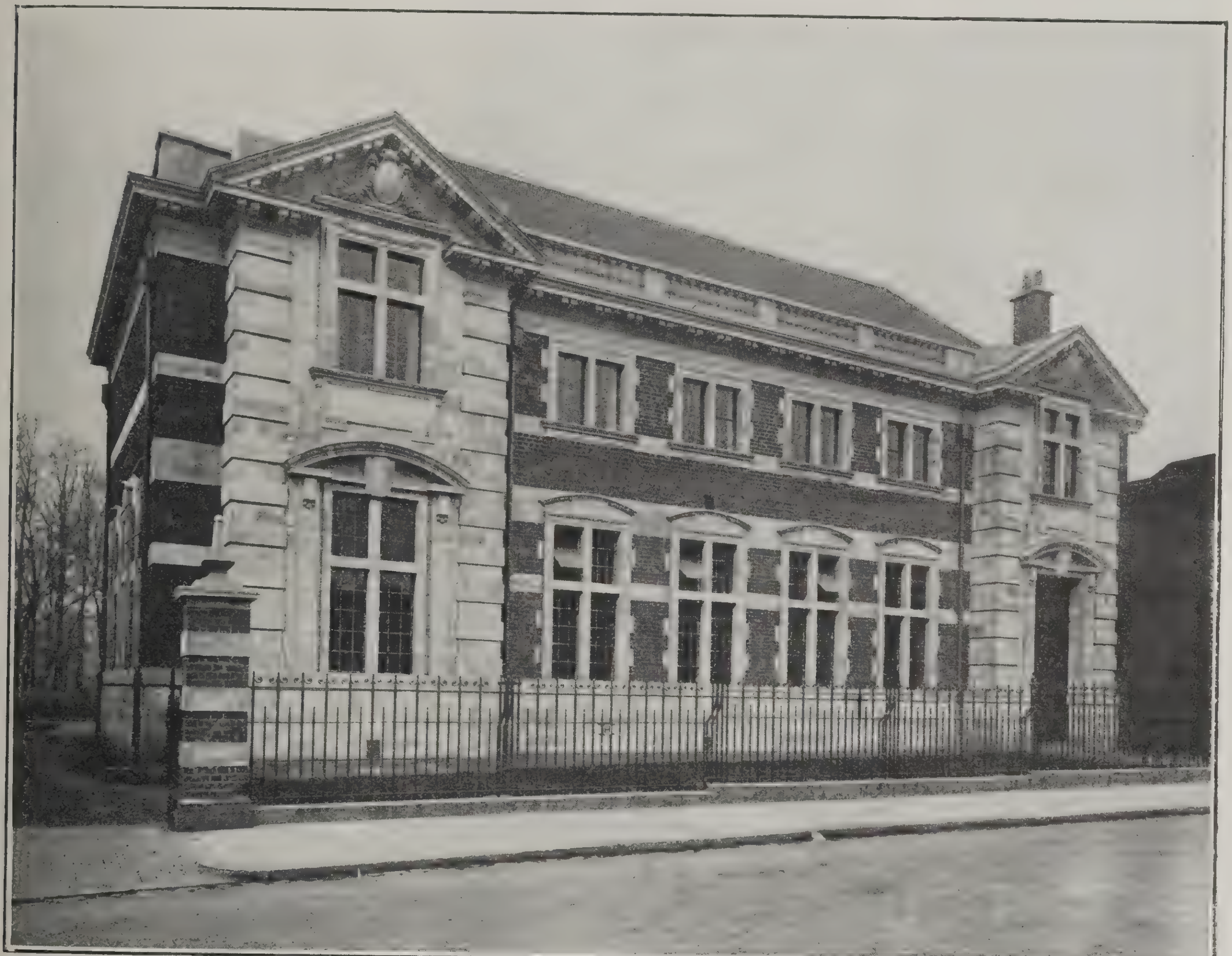
*Extracts from the opening address of the 1911-12 Session of the Society of Architects, delivered by Mr. Geo. E. Bond, J.P., President.



PUBLIC LIBRARY, BROMLEY, KENT. EVELYN HELLICAR, A.R.I.B.A., ARCHITECT.

ated that the Royal Institute ought to ke up the question, they have now done , and those members of the Royal Aca- my of Arts who are also members of e Royal Institute have, it is understood, timated that although they are not pre- red to actively support the Registration ll they will not oppose it, therefore one ight imagine that all opposition had en done away with, and that its success assured. Such is not the case, as a al difficulty occurs with regard to the mposition of the Administrative and Re- stering Authority under the Bill. We ntend that such a General Council ould be composed of representatives minated in varying proportions by the yal Institute, the Society of Archi- ts, the Royal Academy, and the Irish titute, together with others elected ectly by and from the general body of ctising architects.

The Reasons for Combination.

Iy personal opinion is that this would he better plan, but the Royal Institute ncil, for reasons I thoroughly appre- e, could not agree to this, and had Society's Bill (which we had just re- d and brought up to date) been pre- ed, the Royal Institute would have nuously opposed it. On the other d, it was provided in their suggestions a Bill that the Council of the Royal itute was to have full control with rd to administration and Registration er the Act, and it is obvious that so as the Society of Architects remain ndependent body we should be compelled to oppose such a measure in Parliament, with an inevitable result, for we must thoroughly understand that in the present congested state of Parliamentary business only unopposed measures have any chance of reaching a second reading.

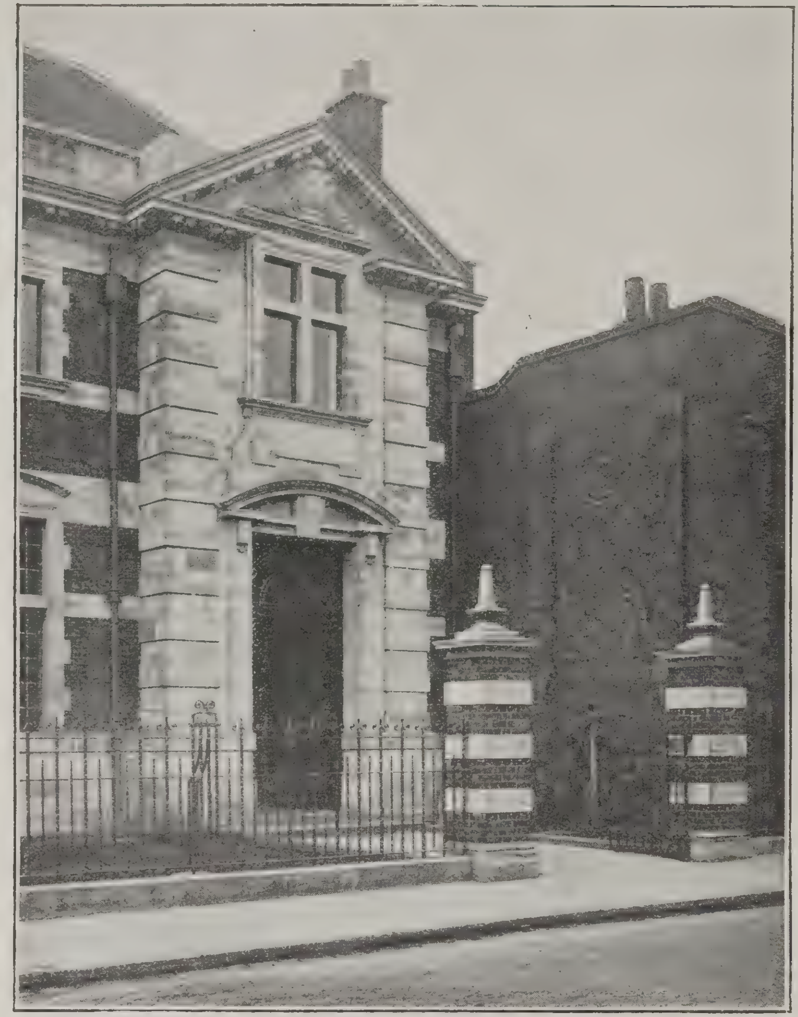
It is recognised by both parties that the opposition of either would suffice to kill a Bill, therefore, the only solution of the difficulty is the fusion of the Society with the Royal Institute. The question is therefore, Is Registration worth the sacrifice? If we are satisfied that Registration is absolutely essential, then both sides must sacrifice something, and in the proposed Agreement between the Councils of the Royal Institute and of the Society, the extent of those sacrifices has been closely defined and the limit of concessions has been reached by both parties. The result represents the maximum of what either party is prepared to concede and the minimum of what either will accept.

I feel confident therefore that if the present suggested arrangement is for any reason blocked, or if it is allowed to fall through, the labour of many years will have been wasted, and a very considerable time must elapse before either party will be prepared to initiate a new scheme of unity, and it is quite certain that neither the Royal Institute nor the Society of Architects will be able to carry a Registration Bill through except by mutual agreement.

I am sure that in a profession which demands of its *bona-fide* followers such wide and varied gifts, and in which all who hope to attain to some degree of excellence carefully train themselves in habits of clear and consistent thinking, foresight, and self-reliance, no more need be said to commend to them the decision arrived at, after long and earnest deliberations, by those who were specially delegated to enquire into and report as to the best solution of the problem with which they had to deal.

Complete Unity in the Profession.

But there is another point to which little reference has been made, and one to which all our leaders attach even greater importance than to that of Registration, viz., that the consummation of the suggested arrangements will be the first real step in the process of attaining complete unity in the profession. The well-being of a great profession cannot be considered merely as a question of to-day or to-morrow, or even ten years hence; there is a long future before it, and it is with this thought ever in our minds that legislation is proposed. Looking ahead your leaders see a vista of long years of useful work, progress, and development, under the banner of one great Institution, including within its ranks all *bona-fide* architects in the United Kingdom, strong enough to legislate within itself for the ultimate benefit of its members, and with sufficient power to compel their obedience to its moral edicts and code of professional honour, and by these means be able to enforce its reasonable regulations upon those outside, with regard to competition conditions and other matters affecting the honour and interests of the profession.



PUBLIC LIBRARY. BROMLEY: DETAIL OF ENTRANCE.
EVELYN HELLICAR, A.R.I.B.A., ARCHITECT.

Your present leaders are but laying the foundations upon which their successors (that is to say, the more able, earnest, and thoughtful of the young men of to-day) will raise and maintain the superstructure.

Is the attainment of such an ideal worth a little present self-sacrifice? I simply ask the question, hoping it will be well considered by all before a definite opinion is expressed.

PICTURE EXHIBITIONS.

The French Gallery.

At the gallery in Pall Mall East, known as the French Gallery, there is an exhibition which is not French, being a collection of thirty portraits by Raeburn, and very well Raeburn bears the severe test of a one-man exhibition. If he is not quite Reynolds or Gainsborough, he constantly reminds one of them, not quite in texture and colour, but in the force and dignity of his figures. That he was a great admirer of Gainsborough is obvious in the composition and in the treatment of the backgrounds of some of his portraits of women, where the foliage seems to be modelled on Gainsborough's manner. The portraits are not equal in interest, but they form a very fine collection, the tendency of which is to make the spectator think more of Raeburn than he did before.

Maclean's Gallery.

At Maclean's Gallery in the Haymarket there is an exhibition of the works of two very different Frenchmen, Isabey and Diaz; for artistically Diaz may rank as a Frenchman, though he was Spanish by birth. Isabey is a very unequal artist, much of whose work hardly enables one to understand the estimation in which was held under the First Empire; b there are some fine things among his pi tures here, "La Lettre d'Abandon," "T Tempest," "The Duel," and "T Assault," an attack of mediæval caval which reminds one somewhat of h greater successor, Decamps. As to Dia there are practically two Diazes—the o who painted Oriental figure groups, moderate interest, the other who paint many of the finest little woodland lan scapes ever seen, with a manner differe from that of any other landscape paint in the world. The collection contai some splendid examples of his works this class.

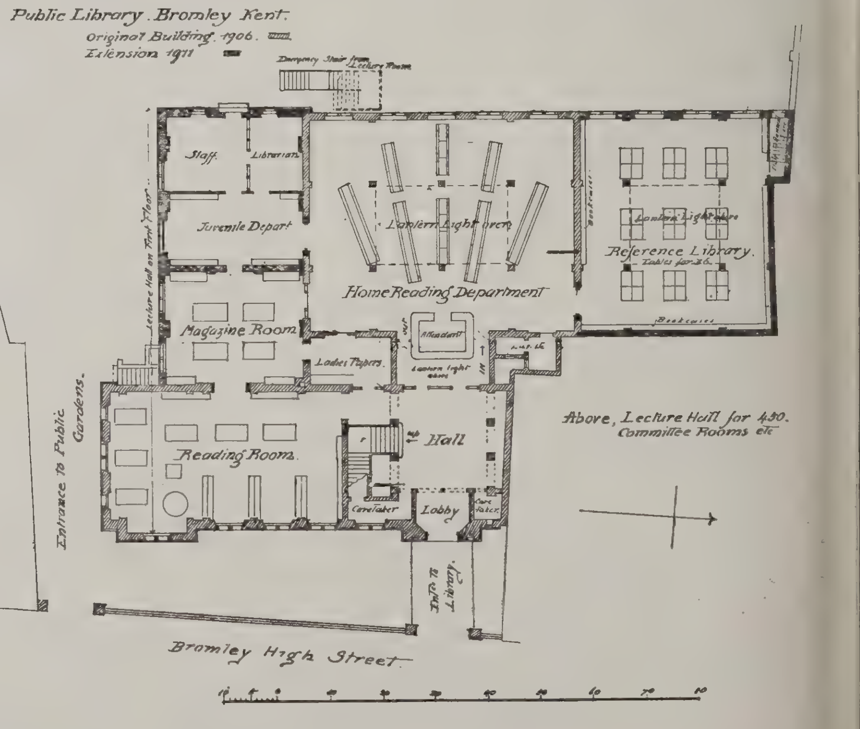
PUBLIC LIBRARY, BROMLEY, KEN

The main portion of the Public Libra at Bromley, Kent, was erected in 19 the cost of the building being defrayed Mr. Carnegie.

Provision in the original design w made for enlargement, and during the la few years its crowded state made an e tension necessary. This is now being ca ried out, Mr. Carnegie having made further grant for the purpose.

The site, although presenting some di culties, has the advantage of a very char ing outlook at the back over a well-wood valley, the ground falling rapidly a admitting of a basement storey in the re for the use of the staff with but little exc vation.

All the rooms in constant use of t public have been kept on one floor order to economise the working expense on the first floor are arranged a lectu hall seating 450, committee rooms, e The exterior fronting the High Street in Portland stone and red brick, wi hand-made tile roof. The interior fittin to the public rooms are in oak. T original contract was carried out Messrs. Norman and Burt, of Burg Hill, while Mr. Duthoit, of Bromley, entrusted with the extensions now in han The architect is Mr. Evelyn Hellic A.R.I.B.A.



CORRESPONDENCE.

Portinscale Bridge.

the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

IR,—Greatly as one must rejoice to see weight of your influence put upon the ht side in this matter, you will, I feel e, in justice to the Keswick people, mit me to point out that there is no wn Council in that place, and that, if re were one, it would have nothing to with the bridge in question, which is enough from Keswick. The respon- le authorities in this case are the Cum- land County Council and the Highways mmittee thereof.

F. J. PAPE.

ockermouth.

hitectural Examination and the Office of Works.

the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

IR,—The question of architectural ex- ination is again to the front. The al which may be drawn from Professor ginald Blomfield's article in a recent nber of the R.I.B.A. Journal is that itectural examination is a necessary . In so vast a field as architecture it ifficult to test a man in a few days.

upposing it were possible to keep a for several years designing and ting buildings under the supervision experts, it would undoubtedly be a er test than a few days' examination ch has been crammed up for. But Commissioners of Works do not ear to think so. They have men in r service who have for many years doing work which they consider factory; but these men are apparently in less regard than the juniors who entered by a comparatively recently tuted examination. Thus the experi- of the senior men, instead of being e the most of, is to a great extent unted. This cannot be in the in- st of the public service.

EFFICIENCY.

HE NEW AUSTRALIAN APITAL COMPETITION.

aling with what it calls the "archi- ' boycott" of the Australian capital etition, the "Standard" gives a brief ory of the quarrel."

dney and Melbourne, both rivals for glory of being the chief city of the monwealth, were too jealous of each to allow either to have the honour. festly it could not be shared. There nly one way out of the difficulty. It agreed that a new capital should be —to lie between the two cities and where in New South Wales. The a very fine one for the purpose—was n in the Bush. On this beautiful at Yass Canberra some day a great will arise. Maps and scales of the accounts of its water supply, and necessary details have been issued e Federal Government of Australia, rizes to the value of £1,700 have offered—an extraordinarily small nt in view of the bigness of the un- king. This, though a matter for sm by architects, was not the cause opposition the conditions aroused. hief objections are two. The Minis- charge of the matter, the Hon. King lley, decided that the plans were to judicated upon by three judges—an ect, a surveyor, and an engineer. d not, however, name them. That is first offence in the eyes of the architectural profession. His second was in selecting himself as the final arbiter.

As soon as the conditions were published the Australian Institute of Architects pointed out that it was not fair or reasonable to ask professional men to do a great deal of work when they had no guarantee that their judges would be men of real eminence. They demanded that the names of the judges should be published, or, if they were not named, that the architect should be nominated by a responsible body, the Australian Institute, for example, the engineer by the Engineers' Institute, and the surveyor by the Surveyors' Institute, which would guarantee the fitness of the nominees for the position.

To the final selection by the Minister himself they raised even stronger objection. The competition, they urged, should be left absolutely to professional judges. They contended that a proper board of assessors should be appointed with full powers of decision. Mr. O'Malley ignored the protests. The architects appealed to the Royal Institute of British Architects —the parent body. The president and other prominent members took up the case and saw the High Commissioner. The competition, it was contended, should be more international in its scope, and should be judged by five assessors—an engineer, a surveyor, and three architects, one architect nominated by the Australian Institute, one by the British, and one by the American Institute. The board would thus have a preponderance of architects, and its composition would be more likely to attract competitors from all the world over. These representations were forwarded to Australia. The Minister remained unmoved. The Australian Institute then made a final offer to the Minister. The Minister declined to alter the conditions in any way, and there the negotiations ended.

The Australian Institute at once advised its members to abstain from competition. A similar circular has been issued by the parent body in Great Britain, and the American Institute is expected to follow suit.

LIST OF COMPETITIONS OPEN.

NOVEMBER 30. TECHNICAL INSTITUTE, CARDIFF.—The Cardiff Education Committee invite architects to submit competitive designs and estimates for a technical institute to be erected in Cathays Park, Cardiff. Mr. J. S. Gibson, F.R.I.B.A., has been appointed assessor. Full particulars may be obtained from John J. Jackson, Director of Education, Educational Offices, City Hall, Cardiff, on deposit of £2 2s.

NOVEMBER 30. HOSPITAL, HASTINGS.—The Joint Committee of the East Sussex Hospital and the King Edward VII. Memorial Fund invite architects to submit competitive designs, etc., for the proposed new hospital. Mr. Edwin T. Hall, F.R.I.B.A., of 54, Bedford Square, London, has been appointed assessor. Conditions and instructions may be obtained from Mr. W. M. Rhodes, East Sussex Hospital, Hastings, on deposit of £1 1s. Premiums of £125, £75, and £50 are offered.

DECEMBER 30. WORKMEN'S DWELLINGS.—At the Eisteddfod, 1912, a prize of £50 will be offered for designs for workmen's dwellings. Apply to Welsh Housing Association, 9, Temple Chambers, E.C.

JAN. 1, 1911. INFIRMARY EXTENSION, ROCHDALE.—The Board of Management of the Rochdale Infirmary invite architects practising in Rochdale prior to January 1st, 1911, to submit plans, designs, and estimates for extending the present buildings. Conditions of competition and instructions to architects, together with other information can be obtained on application to T. Elvyn Kershaw, Secretary, the Infirmary, Rochdale. Mr. Alexander Graham, F.R.I.B.A., has been appointed assessor.

JANUARY 6, 1912. PUBLIC LIBRARY, STAFFORD.—The actual building is not to cost more than £4,000. Enquiries must be sent to the Town Clerk, Stafford, not later than November 25, and designs must be sent in by January 6. Author of design placed first may be appointed architect of the work; the author of the design placed second to receive forty guineas. Mr. Henry T. Hare, F.R.I.B.A., is assessor.

JANUARY 20, 1912. STATUE AT HAVANA.—Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana, before January 20. The sum of 100,000 pesos (about £20,600) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., where also further particulars (in Spanish) may be seen.

JANUARY 29, 1912. GOVERNMENT PALACE, MONTEVIDEO.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640. and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

JANUARY 31, 1912. FEDERAL CAPITAL CITY, AUSTRALIA.—Competitive designs are invited by the Commonwealth of Australia, for the laying-out of the Federal Capital City. Premiums are offered as follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered by January 31st, 1912, to King O'Malley, Minister of State for Home Affairs, Commonwealth of Australia.

[The Institute of Architects of New South Wales and the R.I.B.A. have asked members and Licentiates not to take part in this competition unless the conditions are made more satisfactory. See our issue for November 8, p. 485, and article printed at head of this list.]

JULY 1, 1912. CITY EXTENSION SCHEME, DUSSELDORF. — Premiums £1,000 and £375. Particulars from the Chief Burgomaster, Dusseldorf.

No date. CENTRAL HALL, OFFICES, AND CARETAKER'S HOUSE, BOLTON.—The Lancashire and Cheshire Miners' Federation invite architects in practice on their own account within a radius of 25 miles of the Town Hall, Bolton, to submit designs in competition for the above. The Committee of the Federation have appointed as assessor Mr. Jonathan Simpson, F.R.I.B.A., of Bolton. The premiums offered are £50 and £25 for the two best designs in order of merit as adjudged by the assessor. Conditions and instructions will be sent to architects on application to Messrs. Fielding and Fernihough, Solicitors, 7, Fold Street, Bolton, accompanied by a deposit of one guinea (returnable on fulfilment of conditions).

CLASSICAL ARCHITECTURE FROM GREECE TO AMERICA.

Professor C. H. Reilly (Roscoe Professor of Architecture at the Liverpool University) last week delivered an interesting illustrated lecture at the Arts Theatre on "Classical Architecture from Greece to America."

At the outset Professor Reilly remarked that art, like religion, made a direct appeal to the conscience. They might say the two elements of architecture were the minor element of structure for utility and the larger element of monument making. The essential of a monument was that it should be isolated, standing in complete unity, and outside this unity there must be the essential element of massiveness. St. George's Hall, for instance, reduced to a model would be trifling.

Another necessary quality of great architecture was refinement, and the complement of greatness was the refinement which came from restraint. A series of limelight illustrations was given representing the beautiful types of Grecian and Roman architecture, evidence being afforded of the success of the Greeks in combining sculpture with architecture, thereby securing one great unit.

Passing to the Romish architecture, specimens of pictures were shown of Roman interiors. The lecturer gave illustrations of Italian architecture, remarking that the Italians added to the completion of Classical architecture two things—the really perfected dome, and the façade. Samples of eighteenth century French architecture were also shown, evidence being afforded of this nation's contribution of elegance to classical architecture.

Coming to English architecture, the lecturer said the field of Elizabethan architecture was swept clean and the muddle set straight by Inigo Jones, who designed Whitehall. St. George's Hall, Liverpool, of which several pictures were given, was the first building that really solved the problem. It had perfect unity inside and outside. The hall was a dignified, solid, refined, and a noble monument. The only direction in which it failed was its setting. If it had been in Roman times it would have been surrounded with colonnades, porticos, and great foræ, and if in Greek times it would have been placed on a podium, and would not have been huddled with railway stations and hotels. Why St. George's Hall had had so little influence in England was perhaps because there had been so little opportunity, very few buildings of that kind having been erected since. In America we now saw the old methods of Greek and Rome re-used for modern purposes, and re-used on a scale which had never before been seen.

CO-PARTNERSHIP HOUSING.

On Friday evening last a dinner, organised by the Board of Management of Co-partnership Tenants, Ltd., was given to Earl Grey, at the Holborn Restaurant, Sir Ralph Neville being in the chair.

Earl Grey proposed the toast of "Co-partnership in Housing at Home and in the Dominions," and, having referred to the impetus given to town-planning by Mr. Burns's Act, and to the many successful garden cities that had been established — Bournville, Port Sunlight, Letchworth, Liverpool, Hampstead, and others—said that capitalists, by the investment of their money with Co-partnership Tenants, Ltd., were certain to receive a return of 4½ per cent. It was not often that they could serve both God and Mammon, but in this case they had such an opportunity.

Mr. Henry Vivian responded to the toast, and pointed out many of the practical difficulties with which the reformer had to contend.

LONDON MASTER BUILDERS' ASSOCIATION MONTHLY REPORT.

A Council meeting of the London Master Builders' Association was held at Koh-i-Noor House, Kingsway, W.C., on Thursday, the 9th inst.

The President (Mr. G. Bird Godson) presided.

. The Council received the report of the Bricklayers' Trade Committee re overtime payments, and gave instructions with regard to it.

Many matters of trade interest were considered, and the necessary instructions were given in connection with the various questions under consideration.

The following were elected members of the Association: (1) Ordinary member, Mr. A. E. Symes, Stratford, E.; (2) Associate member, Messrs. John Russell and Co., Ltd., 145, Queen Victoria Street, E.C. Messrs. the Patent Rapid Scaffold Tie Co., Ltd., 124, Victoria Street, Westminster, S.W., were nominated as Associate members of the Association.

THOS. COSTIGAN, Secretary.

PROPOSED CATHEDRAL FOR COLOMBO.

A meeting was held last Wednesday (November 15th) at the Westminster Palace Hotel, with Lord Stanmore in the chair, in support of the scheme for a Cathedral in Colombo. The new Cathedral is to take the place of the good, but small, and now far from central, church which the first Bishop of Colombo built in 1852, to be at once Chapel of St. Thomas's College and Cathedral till the time should be ripe for a building more worthy of an important Crown Colony. It will occupy a central site, and, as the Bishop of Colombo says, "be a conspicuous witness at this great meeting place of the highways of the sea."

MORE ABOUT STONE SLATINC AND PANTILES.

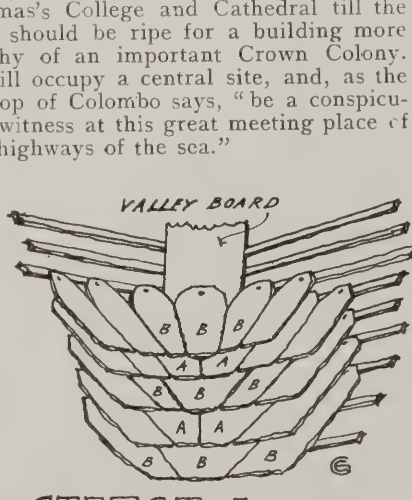
BY EDWIN GUNN, A.R.I.B.A.

Supplementing the recent illustratec articles on the above subjects, a fev further details may be of interest. Mr Henderson's notes apparently deal prin cipally with the Yorkshire practice, witl which I am not familiar (though I hav seen examples). Cotswold slate valleys ar not swept in the manner indicated in hi sketches, and Northamptonshire example show a further occasional variant, thoug most often on the Cotswold lines.

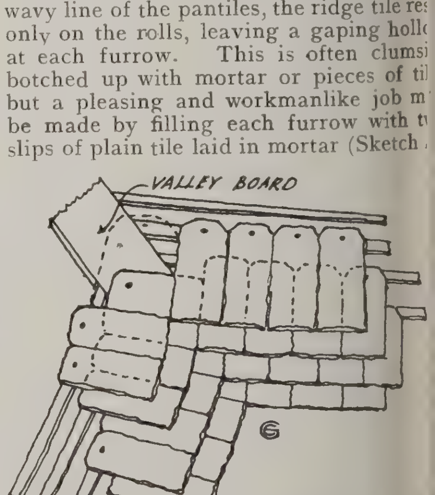
In the typical Cotswold roof the valley courses are laid with central joint and cen tral slate alternately, as Sketch 1. Th course A consists of two taper slate known as "skews," course B having three known as "bottomer" and two "lie-bys. In the Northamptonshipe type the course are swept and "laced" into one anothe as Sketch 2, in a similar manner to th old swept valley of the Home Countie tiler, using nearly all square slates, almo without cutting—a method really mor proper to tiles than to slates, in whic cutting is not an evil, since they are nece sarily cut to shape in the first instance.

It would be interesting if Mr. Henderso would give similar enlarged sketches the method of laying the valleys he show which apparently have a central valle slate in each course, and also the metho by which the lower ridge intersection waterproofed at the point where it engag with the main roof slope. In mode work a large apex soaker or saddle-pie is generally dressed over the intersecti under slating or tiles, but in the Cotswol an inverted length of stone ridge is oft laid as a short cross gutter. The ridg he shows would all require dressing; t Cotswold type is often saw-cut from block of stone with very little waste, as Sketch 3.

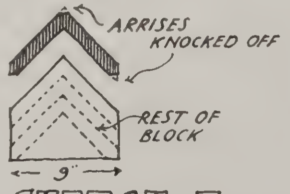
On the subject of pantiling, an awkwa point not mentioned in the previous arti is the setting of the ridge. Owing to t wavy line of the pantiles, the ridge tile re only on the rolls, leaving a gaping holl at each furrow. This is often clums botched up with mortar or pieces of ti but a pleasing and workmanlike job m be made by filling each furrow with t slips of plain tile laid in mortar (Sketch



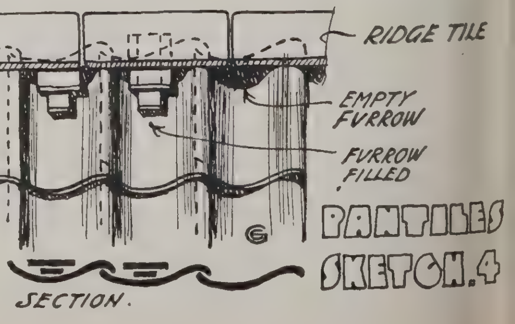
SKETCH 1



SKETCH 2



SKETCH 3



PANTILES
SKETCH.4

THE ECONOMY OF FIRE-ESISTING CONSTRUCTION.

Ir. Ernest Flagg, the eminent erican architect, states, in a letter to New York newspaper, the results of a ctical demonstration which he made h the object of showing that it is sible to build fireproof tenements ch will yield a better return on the estment than those of the ordinary in- nmable type. After a great deal of erience in planning both kinds, he ame convinced that the economies in ce which the fireproof method of con- iction permits of more than offset its ater cost. To test the correctness of theory on a plot of land 100 ft. square building was erected. Although this lding was not, at the time of writing, dy for occupancy, all contracts for its npletion had been let, its exact cost known, and the correctness of the mates had been verified; and from m it would seem that there is no longer reason why the building of inflam- ble tenements should not be prohibited, such a regulation would inflict no dship either on landlord or tenant, but, the contrary, both would be benefited, the city would receive much addi- nal fire protection, which it sorely ds.

he enactment of the present [Man- tan] tenement law was opposed by ny who thought its drastic require- nts for light and air would prove bur- some both for those who build and se who live in tenements. It was con- ded that the large courts and yards ed for would cause a great loss of floor ce and would involve either less in- ne to the owner or increased rent for tenant. The practical working of law during the ten years in which it been in force has shown that while re is a considerable loss in the number ooms of legal size which are obtained he lot, there is such an improvement their quality that the loss of space is ut offset by the higher rent a room ch the tenant is willing to pay. People formerly occupied four rooms, three which were dark, are willing to pay equal rent for three rooms all of ch are light. So also two light rooms found to be almost the equivalent of e rooms two of which were dark.

Fewer and Larger Rooms.

nder the old law it was the custom to ain fourteen rooms to the 25 ft. lot on h storey. The apartments generally sisted of two suites of four rooms and suites of three rooms to the floor, room in each suite being lighted er from the street in front or the yard he rear. The other rooms were prac- lly dark. Under the new law it is no ger profitable to build houses on the gle lot of 25 by 100 ft., but using the as a unit the average number of rooms he floor which is obtained has fallen n fourteen under the old law to about en under the new law. In some cases lve rooms to the lot to the floor have n secured, but these are few. In this building of which Mr. Flagg speaks e is no falling off in the number of ms as compared with the old-law tene- nts. It has as many rooms to the lot the floor as could be had before the law went into effect.

lere then we have 14 rooms of legal to the lot to the floor for the first e since the new law was passed. Here have the large courts and yards which the new law calls for, with no loss of space inside the building. Here we have all the benefits of light, air, and privacy which the new law secured, together with as many rooms as were ever obtained under the old law. Moreover, the building is fire-proof and vermin-proof; each apartment has its own private toilet, and is in other respects more conveniently arranged than were the old tenements.

The gain of from two or three rooms to the lot to the floor may seem a small matter to the layman, but it makes a vast difference in the earning power of the building; nor is this the only gain. The law requires that all storeys shall be at least 9 ft. high in the clear; also, if the building exceeds 60 ft. in height, all courts and yards must be enlarged and all walls made thicker. It is, therefore, important that the ordinary tenement should not exceed this limit of 60 ft., for if it does, increased cost and a further loss of floor space occur.

Fireproof Construction Economical.

With wooden floor construction of the usual kind it is not possible to obtain six storeys of 9 ft. each within a height of 60 ft., while with fireproof construction the floors may be made so thin that it can be done, and it has been done in the new building in question. This building is, therefore, several feet lower than it could have been if not fireproof, yet there is no loss in the clear storey height.

Comparative Cost.

Exclusive of the cost of the land, a six-storey tenement house of the ordinary kind would cost to build approximately $27,500 a lot. It would contain at the utmost 68 rooms to the lot. The fireproof building I refer to will cost $32,500 a lot to build and will contain 83 rooms to the lot. This sum includes taxes and interest on the capital invested during the time of erection, architects' fees and every other necessary expense. Assuming that both buildings occupy lots costing $15,000, then each room in the house of the inflammable type will cost $625, and each room in the fireproof house will cost $572. Thus the rooms in the superior building will cost over 8 per cent. less than those of the inferior one. Moreover, the annual cost for repairs for the fireproof building would be considerably less than for the other, and its life longer.

If all this is true, why should we continue to use wood in the construction of tenements? It would certainly be to the interest of all concerned to have fireproof buildings, even if their cost was somewhat greater; but when it can be shown that foot for foot the floor space they contain can be had for less than in buildings of the combustible kind, what excuse is there for the use of wood in tenement construction?

This favourable showing for fireproof tenements could be greatly improved if it were not for our absurd building law. As the law now stands it places a premium on the use of wood, and a heavy and unnecessary handicap on the use of non-inflammable materials.

BUILDERS' FOREMEN'S ASSOCIATION PENSION FUND.

To the list of donations in aid of the above fund already acknowledged in these columns we have to add the following:—Messrs. Stuart's Granolithic Co., Ltd., £1 1s.

NEW CABINET WORKS, BEDFORD.

The new premises known as Bedford Cabinet Works, Bedford, which have been erected to meet the requirements of Messrs. C. and R. Light, Ltd., whose chief offices and warehouses are in Curtain Road, London, E.C., have been erected between the London Road and the Midland Railway, Bedford to Hitchin branch line, in accordance with the drawings and specifications prepared by the architect, Mr. W. Prows Broad, London, the builders being Messrs. Nicholds and Reynolds, Ltd.

The main buildings comprise three blocks covering altogether an area of 45,826 superficial feet, and connected by two enclosed corridors. Each block has separate sanitary conveniences, and with the timber store, drying kilns, boiler-house, and fumigating chamber, cover a further area of 4,312 superficial feet, all being of one storey, with ample space for extensions and workmen's dwellings, etc.

The plan of the buildings forms a parallelogram, as being best adapted for the purposes of the private railway siding which has been constructed and connected to the above branch line for the requirements of those works only, and has been made to run parallel with the premises.

The walls are built upon reinforced concrete, and are of purpose-made hollow concrete building blocks; the lintels and finishings being reinforced and the quoins to the external angles of the buildings are rusticated.

The roofs are constructed on the north light principle, the spacing having been arranged so as to secure the maximum amount of light; the whole of this work, including the columns, being in steel, and iron, executed by Messrs. Geo. Sands and Sons, Ltd., structural engineers, of Colwick, Nottingham, the valley gutters being supplied by Messrs. W. Macfarlane and Co., Glasgow. The roofs generally are boarded, and covered with Fibrocement Cock Brand, roofing slates, diagonal style, with a 2¾ in. lap, with copper crampons and nails, executed by Messrs. C. Zerenner and Co. The glazing is the patent system of Messrs. Helliwell and Co., Ltd., and was executed by them with their galvanised light "Y" and medium "Y" sections steel bars, fitted with detachable zinc caps, and glazed with 3-16 in. cast plate glass, in panes 44 in. wide, with framed opening lights for ventilation, the whole forming a particularly light and effective combination.

The floors are of cement concrete laid on a bed of hard core, and are finished with Portland cement, being provided with deal fillets in the setting in various sections.

The joinery was executed by Messrs. Samuel Elliott and Sons, Ltd., Caversham, Reading, the exit doors in corridors being fitted with panic fittings, and glazed with ¼ in. Pilkingtons' wire-wove rolled plate glass. The armoured fire doors were supplied by Messrs. Mather and Platt, Ltd., and fitted with attachments for self-closing in case of fire.

The water supply is from a well, and is regulated by a system of tanks. The sanitary arrangements include the "Court" fire-clay closets with polished birch seats, and the "Black Friar" water waste preventers. The lavatories are the "Eton" white glazed, all being of the manufacture of Mr. T. A. Harris. The ba and channels of the urinals are of rubbed slate.

The ventilation has been arranged with full allowance for all requirements, the fresh air supply being supplemented by openings in the external walls with dog-legged flues, fitted with external and internal regulating gratings.

The steam heating apparatus is on the vacuum system, with steam at atmospheric pressure, the mains being 3 in. and 4 in. flanged cast iron steam pipes in various sets, each set being provided with a fullway gunmetal valve and a Nuvacuumette valve in the condenser, drop branches being taken from the high-level pipes and connected to the heating pipes supported on iron stands. The condenser branches are from 2 in. to ½ in. of galvanized steam barrel, being taken round the walls at floor level with drop pipes from the high-level pipes, and connected to the condenser main with gunmetal Nuvacuumette valve to each drop. All pipes where passing doorways are carried underground in a cast-iron sleeve piece, and all pipes where passing through walls have a cast-iron sleeve piece fitted to allow of free expansion.

The steam mains have expansion joints with cast-iron bodies, gun-metal sleeves and bushed glands, they being securely anchored to allow of the proper working of the expansion joints.

The boiler-house is fitted with a compound wet-vacuum pump to draw the whole of the above system, with 20 per cent. margin filter, with vacuum and pressure gauges, and with steam and exhaust pipes so that the exhaust steam from pump is utilized in the heating apparatus, the condense tank being of galvanised iron.

The covering used for part of the pipes is plastic non-conducting composition.

The steam heating works were extended by Messrs. Rosser and Russell, Ltd., to maintain a temperature of from 55 to 60 degrees Fahr., with the outside temperature 32 Fahr.

The boiler and chimney shaft and works in connection therewith were executed by Mr. C. F. Davis.

The electric power installation is supplied by the Bedford Corporation, a great feature being that the shafting for the machinery is in trenches below the floor level, the trenching being constructed of reinforced concrete and hollow concrete blocks, the whole being encased with asphalte by Messrs. Lawford and Co.

The timber store and drying kilns have a cubical capacity of about 55,000 and 4,600 feet respectively, and with the remaining appurtenances and equipments the whole of the works form a thoroughly up-to-date and well-considered factory.

LEGAL.

Legal Liabilities of Builders.

In the King's Bench Division, last week, Mr. Justice Bray and a common jury heard the case of Jackson v. London County Council and Chappel, in which the plaintiff, who was a boy between 13 and 14 years of age, claimed to recover damages for personal injuries sustained owing to the negligence of the defendants or their servants.—It appeared that the London County Council were the authority having the management and control of a school in Middle Row, Kensal Road, at which the plaintiff was a scholar, and that Mr. Chappel was a builder and contractor who was employed in January, 1911, by the London County Council to carry out certain repairs to the school. On January 7 Mr. Chappel sent a truck containing the materials necessary to do the repairs to the school. This consisted mainly of what is known as rough stuff, composed of four parts of sand and one part of lime with a little hair. The truck and its contents were left, at the suggestion of the caretaker of the school, in the corner of the boys' playground. The school reopened on Monday, January 9, and the headmaster of the school on his arrival noticed the truck, and gave instructions to the caretaker to have it removed, as he considered it was dangerous, and the caretaker telephoned to Mr. Chappel asking him to remove it. He sent a man, who, however, did not do anything. —During the play interval in the morning and afternoon school teachers were in the playground, and nothing happened. At the close of the afternoon school, as the boys were leaving, the truck was left unguarded, and it was tipped up and the contents emptied out, and some boys played a game of "snowball" with the rough stuff, making it into balls for that purpose. One of the boys threw a ball and hit the plaintiff in the eye, injuring the sight of the eye, and causing him considerable pain and suffering. The plaintiff alleged that the defendants were under a duty to take precautions to safeguard the children attending the school, and that they were negligent in not seeing that the building materials were properly guarded to prevent the children injuring themselves by meddling with the same. There was a dispute as to whether the accident happened in the playground or outside in the street.

The jury found, in answer to questions left to them: (1) that the boys were on the school premises when the accident happened; (2) that the London County Council were by their servants guilty of negligence, which was the cause of the accident; (3) that Mr. Chappel by himself or his servants was guilty of negligence, which was the cause of the accident. They found £50 damages against both defendants, of which they apportioned £25 against each defendant.

Mr. Justice Bray thought that there ought to be judgment for the plaintiff against the London County Council. With regard to the other defendant Chappel, there was distinct evidence that notice was given to him, that the truck in the playground was a dangerous thing, although the actual accident which happened was not anticipated. Therefore, there must also be judgment against him. There would therefore be judgment against each of the defendants for £50. His Lordship added that he had so much doubt about the case that there would be a stay of execution without any terms, in order to give the defendants an opportunity of appealing.

OUR PLATE.

Selected Design for Roman Hill School, Lowestoft.

We illustrate in this issue the design for a new school at Roman Hill, Lowestoft, placed first in the recent competition. The architects are Messrs. Bryan and Hodges, AA.R.I.B.A., of London. The drawings are self-explanatory. The design placed second was by Mr. W. G. Wilson, F.R.I.B.A., and Messrs. Wills and Anderson, AA.R.I.B.A., of London, and that placed third by Mr. Abel Round, M.S.A., of Birmingham. There were 58 competitors.

HOW FIRE SPREADS.

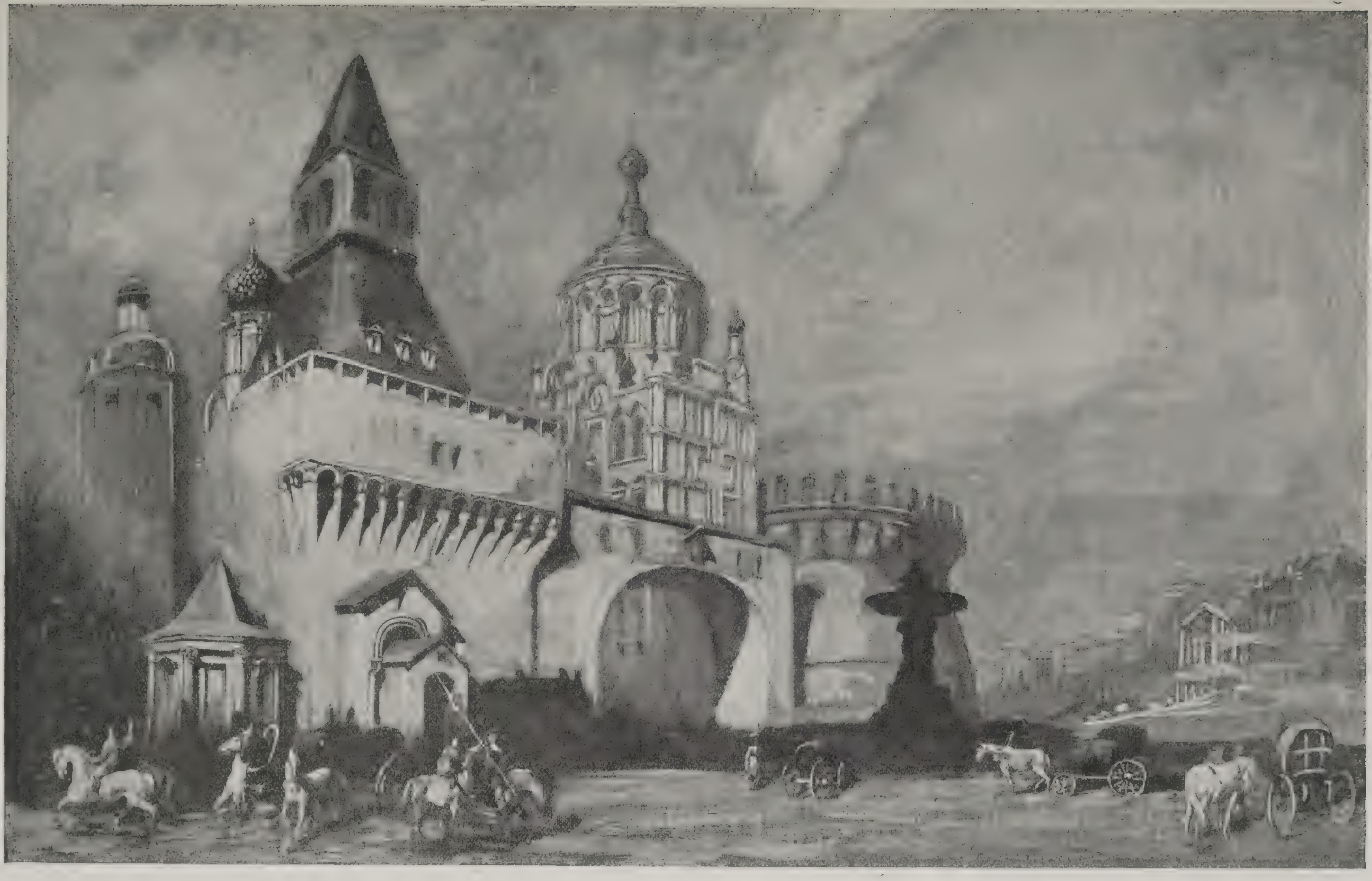
We cannot hope to prevent the startin of fires. We can plan to control the and prevent their spreading. The be form of construction is that which kee fire out in plain sight when it is onc started. In wood, the greatest obstac to the firemen is that of locating a fire th is known to exist. Fire may send out smok from a dozen places, through the hollo walls, and from floor to floor. Eve second of time lost gives it added fur Holes cut through walls, ceilings an floor often furnish more draught to i crease the flames. In many houses the are enclosed spaces that can only b reached by chopping through the wall where fire may smoulder and break o again hours after the fire is seemingly ou

But in concrete construction the wal are almost incombustible, and fire ca not exist inside them. Therefore the fi starts in plain sight and remains in pla sight at all times, and can be attacke instantly, before it has had time spread. Spreading of fire from room room is swift with wood partition an wood door construction. The ideal is concrete barrier, and any concrete part tion is a natural barrier providing t necessary openings for windows and doo ways are closed with metal doors an ribbed glass windows. These doors a now made so that most people cannot te them by sight from hardwood, and the will confine an ordinary fire to one roo or hold any fire long enough to enable to be handled.

Vertical spreading of fire is far mo rapid through stairways, walls, and fro window to window. In stairways an wells it is impossible to furnish barrier but it is entirely feasible to keep con bustible goods away from such opening Make the stair of concrete, the rail of co crete. Leave off the wood baseboard an trim, or cast it with the chair and pictu mould out of concrete. Where possible u wired glass in the windows. Keep in min in both construction and furnishing th if the fire has nothing to feed on it wi not spread.

MOVING A WALL AT ANTWERP.

The Belgian Government decided so time ago to enlarge the three bridges an the moats of the fortifications at th Schyn Door on the road from Antwe to Merxem. The only possible means improving the communications betwee Antwerp and Merxem was to widen th road to 22 m., but to do so involved e croachment upon a railway station, an the displacement for a distance of 10 m backwards of a long wall built in mort cement. The works were entrusted Messrs. G. Van Bergen, of Antwerp. was decided to move the wall bodily. Th task was hazardous, as the wall was one piece and extended over 72 m. wit a weight of nearly 221 tons. This wor has been successfully accomplished. Th base of the wall was first detached from i old foundations and then was strengthene by two steel beams carried on whee travelling on rails. The track, formin a kind of "rolling crab," was next shifte under the wall, and by means of cabl attached to the beams was moved back the required position in 27 minutes the aid of five winches. The prelimina preparations occupied 18 workmen days, but for the actual displacement workmen were employed. As compare with demolition and rebuilding there wa a saving of more than one-half in co and nearly 3½ months in time.



THE PLACE SOUBRASKA, MOSCOW. FROM A DRAWING BY A. C. CONRADE.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

AFETY DEVICES FOR LIFTS AND HOISTS.

BY J. A. M. HUNTER.

It is understood that the Home Office e seeking powers for the compulsory i tallation of automatic safety devices lifts and hoists. Such legislation uld be favourable to reputable makers, r merely because it would promote the se of such devices, but mainly because it would protect such firms from the un- n rited consequences of the injurious im- p ssion that affects the public mind on e ry occasion when an accident is re- p ted—such accidents being impossible were proper precautions are observed.

t must have been obvious to everyone t t some sort of legislation would sooner o later be insisted upon, and architects a lift manufacturers will probably wel- c ne the power behind them which will n essitate the adoption of the interlock- r and safety appliances which are avail- a le.

is necessary to distinguish between ssenger elevators and freight hoists, since h r functions and conditions of work- n are altogether different, and, further, h protection of lift gates being largely uestion of the type of lift enclosure, h in turn becomes further complicated he rules regulating the fire insurance f uildings.

is generally accepted that the most venient and natural position for a pas- e ger elevator is in the well-hole of a t case, the steps working round three s to a main landing (Fig. 1). For an r ortant staircase in a public building u an arrangement would of course e r be contemplated, but for an office u ding it would be difficult to conceive ore suitable position for a lift, even if rtain amount of the dignity of the case has to be sacrificed. The fact there is a staircase affects the fire rance problem at once; so that her the steps and surrounding walls of incombustible materials or not, the t duction of a lift in the stair-well does alter the insurance risk, but simply advantage of a necessary opening g up the building. It is found, then, the elevator and all its moving parts e entirely enclosed with a light orna- e al iron grille, which forms at the time a balustrade and protection for e taircase.

e openings to the landings are usually r closed by collapsible gates with a lock, or with gates fastened with form of spring catch; in both cases olled from the inside only, by the perator. The responsibility of see- g that the gates are properly closed not to be placed entirely upon the perator. Human nature being what and when it is considered how many reds of times these gates are opened lay, it is wonderful that so few acci- n occur.

I s a comparatively simple and inex- n e matter to make these passenger- penings absolutely safe. By means electrical contact, the lift cage can- ove unless the gates are properly s; and by a mechanical grip action ting on the front of the cage, the e are automatically opened and closed e h landing as the cage passes up and The first operation ensures the g of the gates, and the second pre- anyone from opening them. These devices can be adjusted with equal to hydraulic elevators, the only nce being that instead of the closing of the gates completing an electric circuit, it controls an electric grip on the hand rope and releases it.

The probable cost would work out about £5 extra per gate, complete with all wiring. The attachment to existing lift enclosures would of course be a more expensive matter, as it would most likely involve an alteration either to the front of the enclosure or to the cage. This would be necessary, at all events in the examples we have seen, from the fact that the locking gear requires from two to three inches clearance between the enclosure front and the cage. This is a detail which no doubt would be carefully looked into by manufacturers if the safeguarding of existing lifts became compulsory.

In Fig. 2 (a photograph of two elevators in a staircase), a type of safety appliance can be seen at the right-hand top corner of each of the gates. The contrivances are so very small and unobtrusive that it cannot be said that they affect the enclosure design. There are several different forms of electrical contacts. Some are attached at the top of the gate and some in the centre. It is found in practice that those operating at the top have a tendency to cause the collapsible gates to "kick" at the bottom, necessitating an ordinary bale latch in the centre to keep them closed.

Before passing on to the consideration of freight hoists there are one or two points in the design of lift enclosure which are worth attention even if they do not immediately concern the subject of this article. The ironwork of the lift enclosure ought certainly to be close enough to prevent any accidental contact with the cage or any moving parts, noting the fact that the cage is much nearer to the enclosure at the back than at the sides, owing to the projection of the guide runners and slide. At the same time it is quite possible that one may take an extreme view on this point, with the result that we have the enclosure developing into a triumph of wire netting, familiarly known as "bird-cage work." It ought not to be necessary to have to take precautions to prevent people from damage who wilfully invite an accident by tampering with a lift enclosure.

If the enclosure is fixed with the bottom rail on the nosing of the steps (Fig. 3), the triangular portion ought to be filled up, as there is a possibility of a person's foot getting through. A better system to adopt is to keep the enclosure inside the well-hole close against the ends of the steps (Fig. 4), with the bottom bar just sufficiently high to prevent its getting a deposit of stair sweepings. The moulded nosings on the treads should not be returned on the ends.

We must consider a freight hoist situated in the well of a staircase as being practically out of the question, and it must

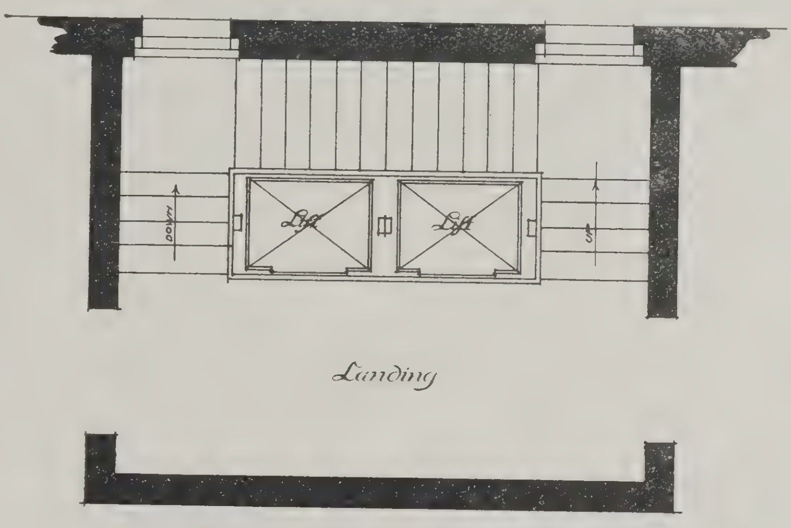
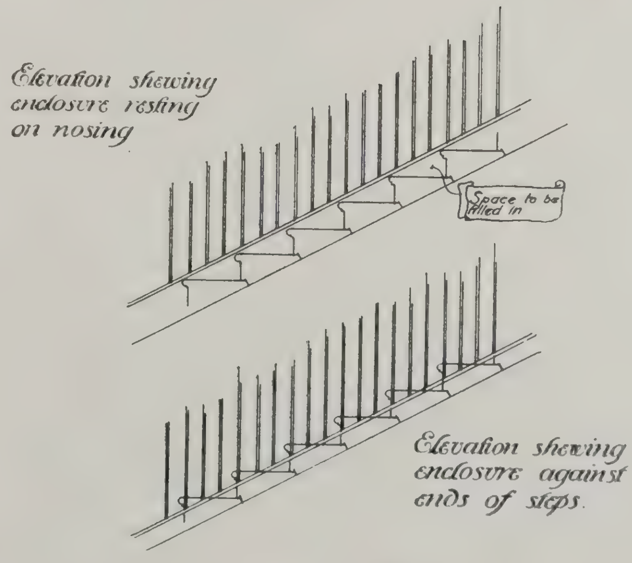


FIG. 1.


Elevation shewing enclosure resting on nosing
Space to be filled in
Elevation shewing enclosure against ends of steps.

FIGS. 3 AND 4.

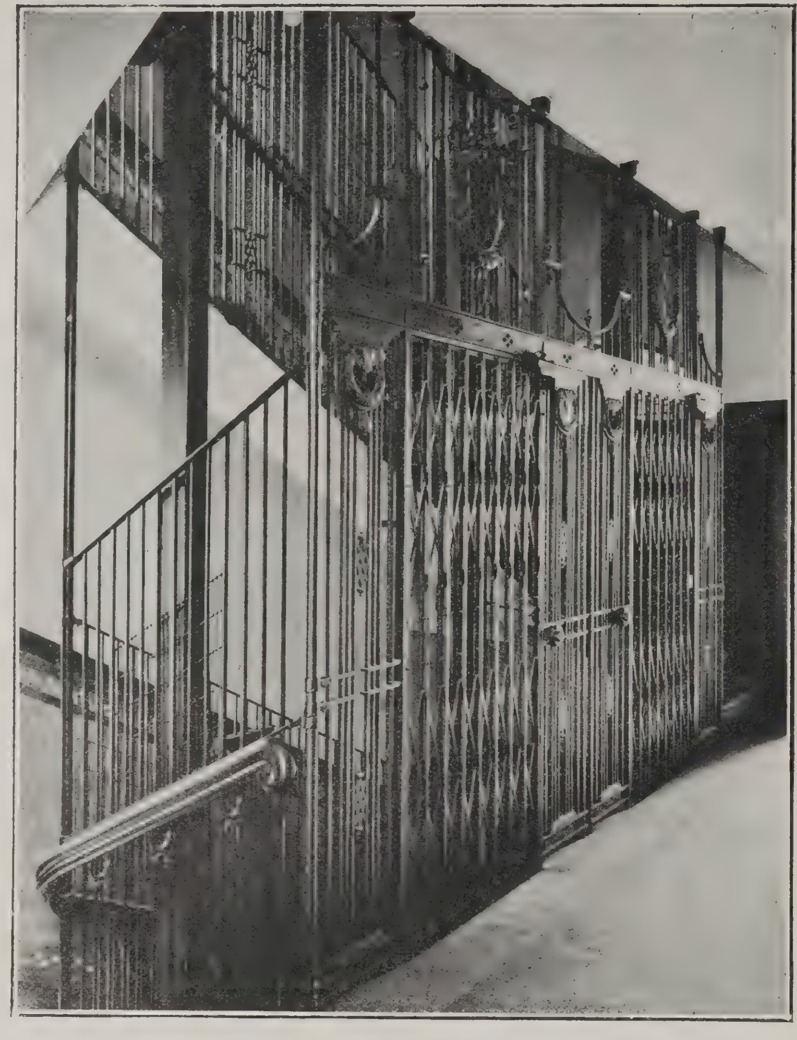


FIG. 2. A MODERN LIFT ENCLOSURE. HARRY S. FAIRHURST, F.R.I.B.A., ARCHITECT.

therefore be placed inside the wareroom which it is intended to serve. In this position it must be surrounded with brickwork from top to bottom, and protected with fireproof hoist doors at the various landings. The fire authorities quite rightly regard a hoist as a very dangerous factor in the case of a fire, owing to the fact that it forms a flue right up the building, connected at each floor. The type of hoist door which can be seen by the thousand is usually of iron (Figs. 5 and 6) hung to open in the centre and fixed to the brick jambs on the warehouse side. In most cases the sole plate, jambs and head are of metal built into the wall the full thickness of the enclosing brick-work, and generally the doors when they are closed can only be opened from the inside by the hoistman. Unfortunately there does not seem to be any unanimity as to whether these doors should be kept closed or not, a point which is very much complicated by the action of the factory inspectors in demanding a "protection bar" across the opening some three feet from the floor. If this elementary device were intended to prevent accidents should the doors be left open, it simply forms an inducement to keep the doors open; and, further, being dependent on the hoist operator, it is just as liable to be out of position as the doors are to be left open. The presence of this common bar has been responsible for many accidents; warehousemen leaning over have overbalanced and gone down the hoist-well, others have been caught by the descent of the hoist when leaning over to see at which floor the hoist was, or to exhort the hoistman to make speed; for the iron doors when folded back just nicely cover the call button. By leaning over this bar, it is possible to tamper with the handrope and set the cage in motion, a fact which is taken advantage of in several warehouses by doing without the services of a hoist attendant, at proved risk of accident.

The protection for those using the hoist being insufficient, it is of course equally so for the hoist attendant. There have been accidents caused by the attendant getting caught on the upward journey of the hoist between the heads of the door openings and the cage bottom. This ought to be clearly understood, because any arrangements proposed, to limit the number of accidents, ought to include the greater protection of the hoistman. The great majority of hoists have to supply openings on two sides, which means that the actual cage has only two sides framed solid; and the fireproof doors being hung on the side next to the wareroom (Fig. 5) what might be termed a series of pockets, about 7 ft. by 5 ft. by 14 in. deep, are formed for the whole height of the hoist-well; and it will be seen that a hoist in passing these recesses would trap any object which might be projecting.

It seems to the writer that the first step in the proposed safeguarding of hoists is to abolish the adoption of iron doors for the dual purpose of fire and hoist protection. Many warehouses keep the iron hoist doors open all day and closed all night, a procedure which the fire insurance companies seem to accept, though in the first
instance all evidence points to the f
that they were intended to be kept clos
It is difficult to know exactly how mu
importance the fire authorities attach
this. Perhaps we ought to regard
matter in this light, that the fire offi
accept the conditions as they are, not
they are sufficient, but because clients
fuse to be put to the extra inconvenien
If this be so, then no doubt the insura
rates are adjusted accordingly. It is c
tain that should a fire break out in
day time it would be a matter of
utmost difficulty for anyone to be resp
sible for the closing of the whole of
doors on each side of the hoist and
different warerooms. Whatever system
protection is adopted, it must be entir
separate from the fire-proof doors, re
gating them to their original purpo
Whether they be left open or closed i
matter which may well be left to the f
insurance authorities.

The protection bar, collapsible gates,
light wirework doors inserted in wo
frames, with electrical and mechani
locking gear as described, should, th
be fixed to the jambs, flush with the ins
of the wellhole as shown in Fig. 5. T
arrangement meets entirely every pos
bilty of accident we have mentioned, a
renders a freight hoist as safe as a p
senger elevator. This is without dou
the best method that can be adopted u
such time as we can obtain a different ty
of fire-proof door.

There would certainly be a demand
some form of door which would be fi-
proof, strong, and at the same time su-
ciently light on its hinges to enable it to
conveniently operated as a hoist door.
such a door could be attached the saf
appliances; and for the protection of
hoist operator a collapsible gate could
attached to the cage openings (Fig.
This method would, of course, be mu
less costly than the previous arrangeme
as it affects a considerable saving in c
lapsible gates. The ordinary wood a
tin-lined door has been adopted in ma
buildings, and it certainly has the adva
tage of being light and working eas
than iron doors, but the objection urg
against it in practice is that the tin lini
is apt to become detached by the bangi
of trucks.

In several buildings the protection ba
have been removed, and light gates so
4 ft. high have been inserted in the po
tion we have suggested; and in others
collapsible gate has been fixed to the ca
opening (Fig. 5). In both instances
measure is imperfect. In the first ca
the openings must be protected to the to
and safety appliances installed, if absol
safety is required; and in the second ca
protection is certainly obtained for
hoistman, but none at the various ope-
ings.

The extra cost of fixing collapsible ga
with electrical contact and locking ge
would be between £9 and £10 per openi
and, as in the case of passenger elevato
the cost would be greater if the gear we
adjusted to existing hoist and openin
It is only fair to add that in a seven-
eight-storey building with openings
both sides of the hoist at each floor, th
proposition would apparently abo
double the initial cost of the installatio

So far we have stated what we belie
to be the only system at the mome
which will adequately meet the requir
ments that the Home Office seem to ha
in contemplation. In the event of leg
lation it is inevitable that many obje-
tions will be offered, and it is easy to fo
see many difficulties which are likely

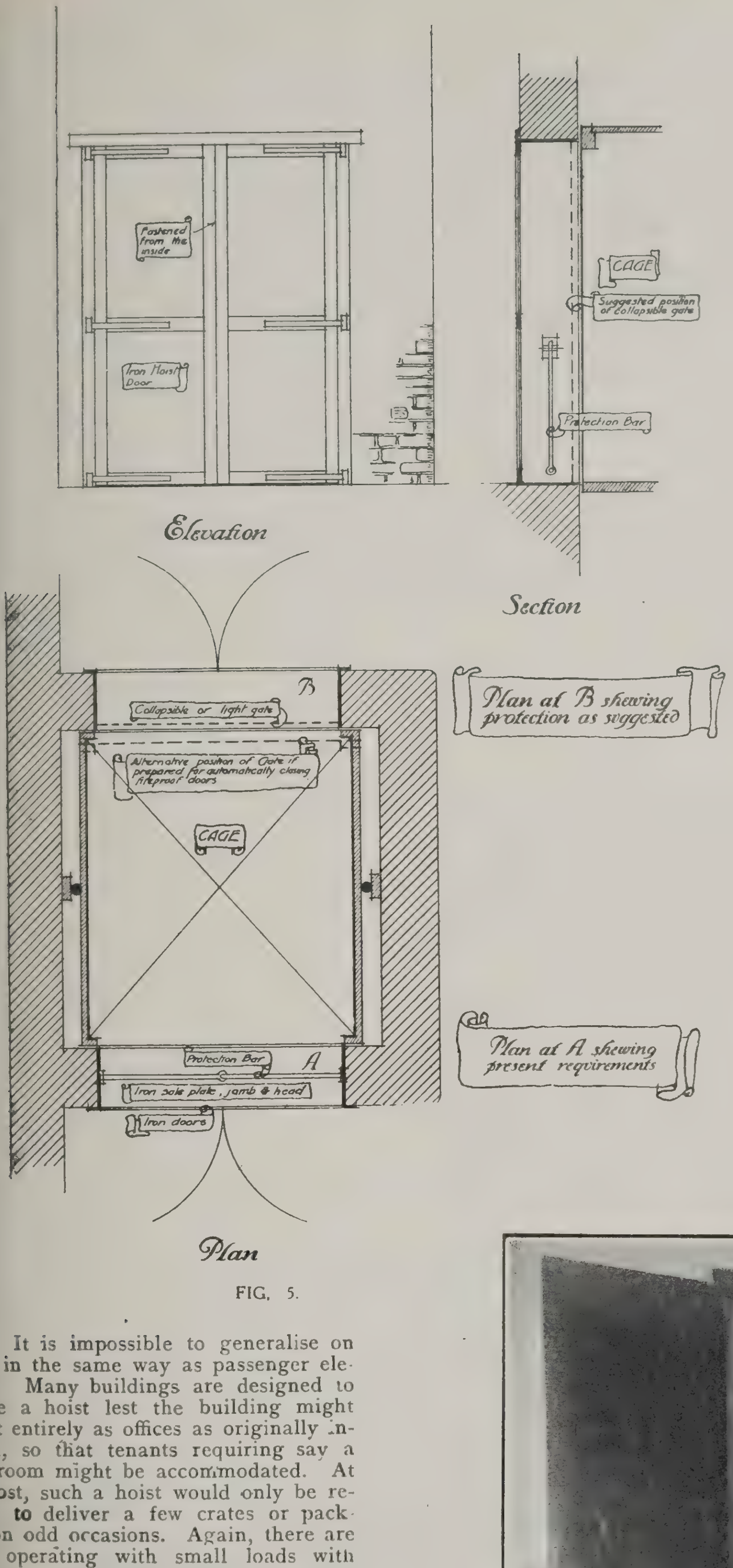

Fastened from the inside
Iron Hoist Door
Elevation
CAGE
Suggested position of collapsible gate
Protection Bar
Section
B
Collapsible or light gate
Alternative position of Gate if prepared for automatically closing fireproof doors
CAGE
Protection Bar
A
Iron sole plate, jamb & head
Iron doors
Plan at B shewing protection as suggested
Plan at A shewing present requirements
Plan

FIG. 5.

ase. It is impossible to generalise on h sts in the same way as passenger elev ors. Many buildings are designed to i lude a hoist lest the building might r let entirely as offices as originally intended, so that tenants requiring say a s w room might be accommodated. At t most, such a hoist would only be rec ired to deliver a few crates or packa es on odd occasions. Again, there are h sts operating with small loads with g ods of a very light type, and there are h sts dealing with cotton goods in bulk c a heavy nature handled on trucks. Even i he risk of accident is greater in certain b ldings, we admit that a great part of t success of the mechanism we have b en discussing depends on being attached t comparatively light, easy-working gates. W hilst in many warehouses these would p ve amply strong, in others anything f asy or projecting inside a hoist openi would be shorn away in very little t e. Many of the technical objections c ild be overcome with very little diffic ty. For example, a rebate in the jamb c ild be made to receive the collapsible gate so that it would close flush with the side of the opening.

In conclusion we find, in regard to passenger elevators, that if it became compulsory to equip them with safety appliance, the cost would not be a very serious consideration. It is quite possible that the very small number of accidents with passenger elevators during recent years may not warrant any further steps being taken. If there are fewer accidents as compared with freight hoists, there certainly seem fewer possibilities of accidents with the former. But the work of a hoist operator is varied, and the handling of goods and trucks in between journeys tends to a liability to forget something which may be vital. The work of the lift attendant, on the other hand, is much more limited, and on that account there is, and should be, less possibility of accident.

In regard to freight hoists, it is to be feared that absolute safety could only be obtained at very great cost. Some satisfactory compromise ought to be possible, however, as a result of close attention to the problem. The whole subject requires careful investigation, and exhaustive information ought to be obtained before legislation is resorted to. Hurried legislation might involve great and unnecessary expense, and an undue increase in the practical difficulties of conducting business.

Tooting's Statue to King Edward.

The Wandsworth Borough statue to the memory of the late King Edward, which has just been unveiled by the Mayor, Mr. A. D. Dawnay, at Tooting Broadway, takes the form of a bronze figure of the late King, eight feet in height, and occupying a pedestal of Peterhead glazed granite, the sides of which bear two bronze panels, emblematical of "Peace" and "Charity." His late Majesty is represented in field marshal's uniform, wearing the regalia of the Order of St. George, and holding the sceptre and sword in either hand. The memorial, which has been erected at a cost of £660, is the work of Mr. Roselieb, of Park Hill, Clapham.

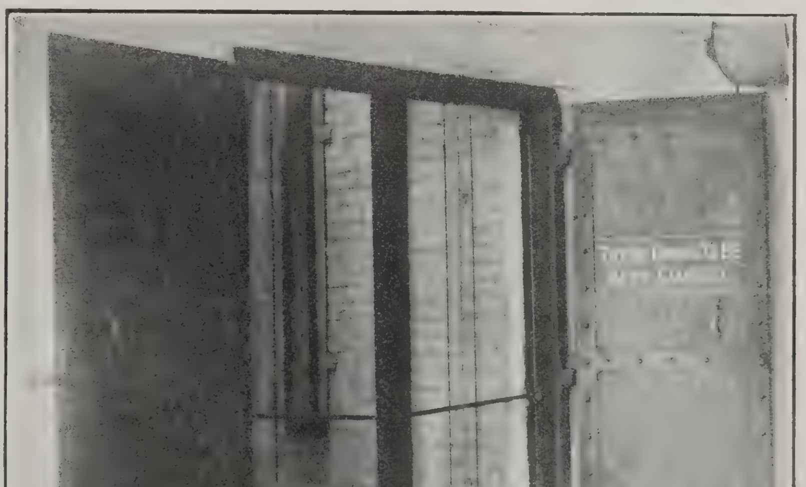


FIG. 6. COMMON TYPE OF HOIST DOORS.

THE LATE MR. D. G. DRIVER.

At the inquest which it was necessary to hold in consequence of the painfully sudden death of Mr. D. G. Driver, a verdict of "heart failure" was returned.

At the meeting of the Architectural Association held on November 13th, the President, Mr. Gerald C. Horsley, referred very sympathetically to the sad event of Mr. Driver's sudden death. It was known, he said, that for many months Mr. Driver had been out of health, and that he had a serious breakdown last summer, necessitating eight weeks' rest, from which he returned apparently well and strong, although it was known to his immediate friends that his then condition fell far short of perfect health. As an indication of their deep feeling in the matter, and of their realisation of the loss which personally and as an association they had sustained, the members would, the President was assured, approve of the decision of the Council to adjourn the ordinary meeting as a mark of respect to their late secretary, who for the twenty years during which he had held that position had early and late devoted all his energies to the fulfilment of its duties. The Association would miss an earnest worker and a devoted adherent. Before moving the adjournment, he would ask Mr. Arthur Bolton to move a vote of condolence, and Mr. Keen to second it.

Mr. Arthur T. Bolton said it was appropriate that he should discharge this duty, since he was probably the member of the Council who had known Mr. Driver longest. Mr. Bolton paid a warm tribute to Mr. Driver's indefatigable zeal and unfailing good temper. He was never a mere official, but seemed to know everybody, and to be the friend of all. He seemed to have no object in life but the progress and prosperity of the Association, and there would be great difficulty in finding a worthy successor.

Mr. Arthur Keen said that, as one who knew the work of Mr. Driver very intimately, he could bear most willing testimony to the fine quality of their late secretary, who had devoted himself body and mind to the best interests of the Association, and never spared himself in any way where those interests were concerned.

Mr. B. E. Nield desired to associate himself with the vote of condolence, and to testify to the perfect accuracy of what had been said with respect of Mr. Driver's zeal, friendliness, and helpfulness.

The motion was then put by the President, and carried in silence, the members rising to their feet.

The President then stated that the Council, feeling that Mr. Driver would have wished the work of the Association to go on uninterruptedly, had decided tha the conversazione announced to take place on November 23rd at Tufton Street should be held on the date arranged.

The funeral of the late Mr. D. G. Driver took place on Thursday last, at Hampstead Cemetery.

"GREAT ROKE," WITLEY, SURREY: CORRIDOR AND LANDING, FIRST FLOOR. BUCKLAND AND HAYWOOD-FARMER, ARCHITECTS.

THE HOUSING AND TOWN PLANNING ACT AT WORK.

Working of the Act of 1909.

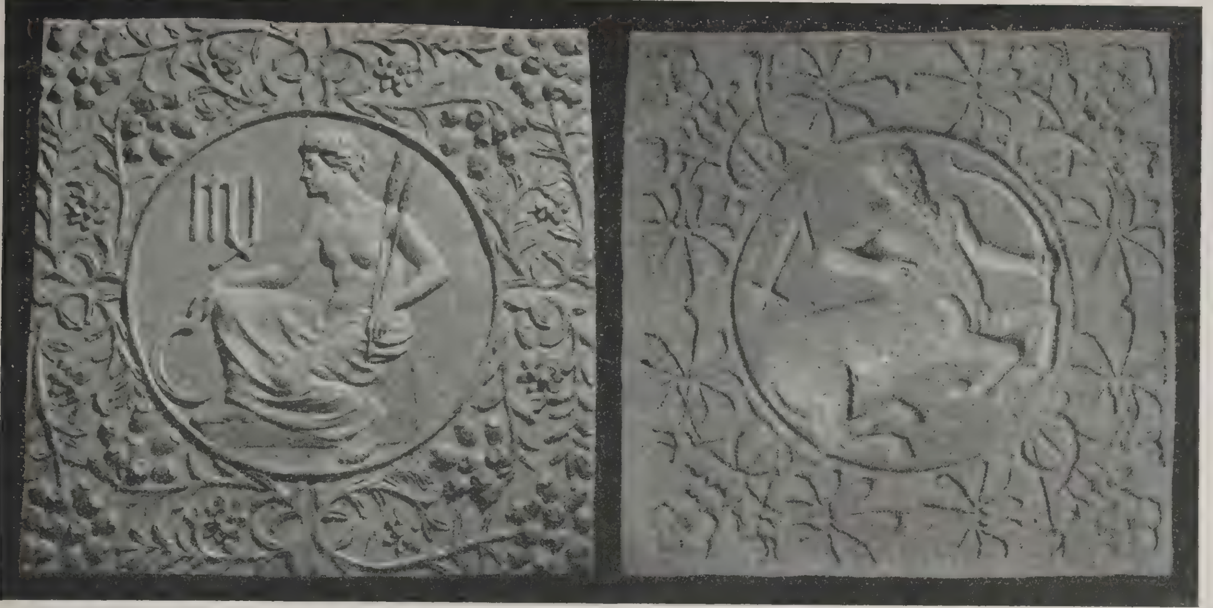
The Housing and Town Planning Act of 1909 having been in force for two years, it has been thought desirable by the Local Government Board to present in brief form some particulars of its operation and of the results achieved under it, and the Housing of the Working Classes Acts, as amended by the Act in question. The Board has accordingly issued a memorandum (Cd. 5,953) on the subject. In regard to housing, the memorandum states that the regulations have been little more than a year in operation, but the information before the Board goes to show that in most districts the necessary arrangements have been made for giving effect to them. The Board has in correspondence with local authorities in the past year urged the importance of strict compliance with the regulations. In large and populous areas the work of inspection will of necessity extend over a considerable period, but the regulations contemplate that houses or areas regarded as most in need of inspection should be dealt with first.

Fitness for Habitation.

Under sections 14 and 15 of the Act it is provided that, subject to certain exceptions, in any contract made after the passing of the Act for letting for habitation a house or part of a house at a rent not exceeding (a) £40 in London, (b) £26 in provincial boroughs or urban districts with a population of 50,000, and (c) £16 elsewhere, there shall be implied a condition that the house is at the commencement of the holding in all respects reasonably fit for human habitation, and an undertaking given that the house shall, during the holding, be kept by the landlord in all respects reasonably fit for human habitation. The obligation so created, which is new to housing legislation, is enforceable by the local authority. The powers of the section have been extensively utilised by some local authorities, but the information furnished by the Board shows that 21 Metropolitan borough councils, 61 councils of county boroughs, 188 councils of other boroughs, 632 other urban district councils, and 447 rural district councils issued no formal notices under the Section. A return of the action taken by the local authorities, however, shows that the number of houses in respect of which notices were given was 18,869; the number of houses in respect of which landlords elected to close instead of complying with notices, 679; the number of houses in respect of which notices were satisfactorily complied with, 11,649; the number of houses in respect of which the local authority executed or were executing the works in default of the landlord, 40; the number of houses in respect of which the notices remained undisposed of at the 31st of March, 1911, 5,088.

Closing and Demolition.

In addition to the formal action indicated, a large amount of repair and improvements to dwelling houses of the class



PLASTERWORK IN MUSIC ROOM, "GREAT ROKE," WITLEY.

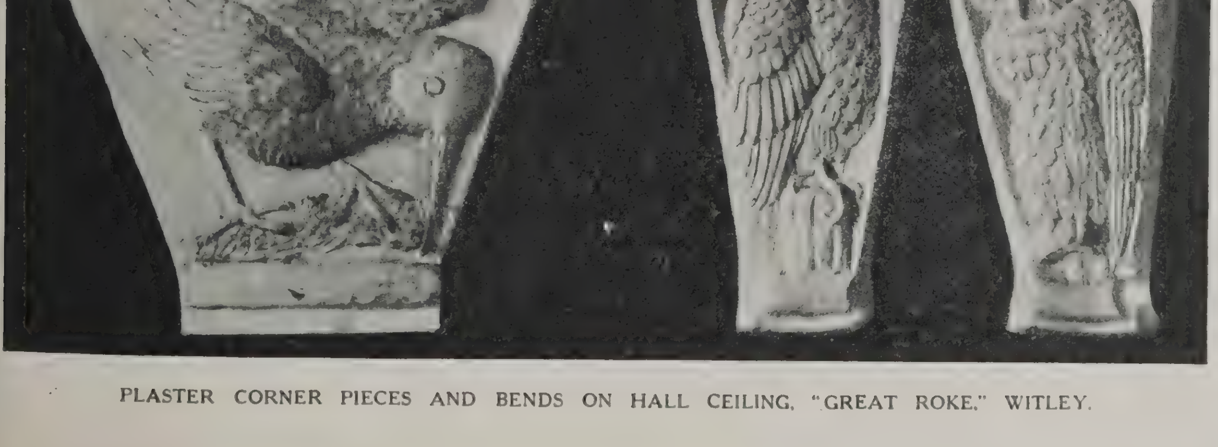
uestion is secured by means of repre-
ntations made to owners by local author-
ie and their officers, and many thou-
s of notices are given annually under
Public Health Act for the removal of
nces as the result of routine inspec-
by the sanitary officers. The figures
gard to the action taken respecting
closing and demolition of houses ex-
a striking increase of local activity
aling with insanitary property. The
ber of houses represented to the local
ority in the year 1910-11 as in a state
ying the making of closing orders
about 3 2-3rds times the number re-
nted in the previous year, and the
ber of closing orders made in 1910-11
nore than three times the number in
revious year. It does not follow,
ver, that all local authorities have
e equally active. The information be-
the Board shows that out of some
local authorities in England and
s no closing orders were made under the Act of 1909 during the year 1910-11 by about 1,400 authorities. Some of those, however, have corresponding Local Act powers under which they proceed.

Land Development.

The powers conferred by Part 2 of the Act of 1909 in regard to the control of the development of land by means of town planning schemes are very extensive, and the application of the new powers to the circumstances of different localities must naturally be the subject of careful consideration by the local authorities. The Act, while creating a new relationship between owners and local authorities in connection with the development of land, contemplates the co-operation of one with the other for the purpose of promoting the general interest. Abundant evidence is forthcoming, says the memorandum, as to the widespread interest which is taken in the subject. The many conferences which have been held by local authorities, architects, engineers, surveyors, etc., and the holding of public meetings in various localities, all testify to this fact. Looking to the novel character of the legislation and the procedure under it, the Board regards the progress hitherto made under it with satisfaction.

PLASTERWORK IN A COUNTRY HOUSE.

The accompanying illustrations show some details of plasterwork executed by Mr. R. M. Catterson-Smith at "Great Roke," Witley, Surrey, the architects of which are Messrs. Buckland and Haywood-Farmer, of Birmingham. Of the pateræ in the music room, shown above, that on the left represents "August" and that on the right one of the signs of the Zodiac. The hall beams are richly ornamented with plasterwork, as indicated by the illustration on the preceding page.



PLASTER CORNER PIECES AND BENDS ON HALL CEILING, "GREAT ROKE," WITLEY.

THE OUTLOOK FOR REINFORCED CONCRETE.*

BY SIR HENRY TANNER, F.R.I.B.A.

The Concrete Institute has now been in existence 3½ years, and as this is the first presidential address that has been presented, it seems to be a fitting opportunity for taking stock of the work the Institute has done during that period. It came into being at a luncheon given by Mr. Edwin O. Sachs at the Ritz Hotel, in July, 1908, when the necessary regulations which had been prepared were agreed to, and Lord Plymouth was elected first President. Under the regulations referred to, the Council felt that they had very little power over the proceedings of the Institute; that power really resting with the executive. This feeling became so strong, that eventually the reconstruction of the Institute on similar lines to those of other institutions of a like character came about, and these have worked satisfactorily, but are still open to improvement. However, at the time of the change the number of members was 881, which must be considered as quite good. The membership is now about 875, while during the 18 months ending last June the net gain had been 21.

The membership is distributed approximately as follows: 350 in London, 260 in the country, and 260 abroad; while the professions, etc., are represented by 582 engineers, 91 architects and surveyors, 31 concrete specialists, 45 chemists and cement manufacturers, and 28 contractors.

Enlarging the Scope.

Concrete and reinforced concrete form parts only of structures. Frequently there is much steelwork and other materials involved, including heavy timbering, either permanent or in false work. It is considered, therefore, that structural engineering, being so intimately connected with our special subject, might well be regarded as coming within our purview, and that papers on such matters should be read and discussed. This is particularly the case, having regard to the large number of engineer members. This can be done without in any way trenching on the prerogative of other societies, as there is no institute dealing particularly with such subjects. The committee is empowered to take energetic steps to foster the structural engineering side, and thus we see how in future we shall in effect be not only a Concrete Institute but an Institution of Structural Engineers as well. With the extended field as indicated, in which practically all the members are interested, and the majority actively engaged therein, the work should be much more valuable.

Sir Henry thought that the membership required better classification, and could usefully be rearranged on the lines of several of the engineering societies, and the committee might well consider the point. There might, for instance, be members, associate members, honorary members, associates, and students. In the future also it may be possible and advisable to hold an examination in advanced structural engineering, which shall in no way trench upon the examinations of other bodies, but be supplemental to them.

Co-operation with Other Institutions.

The Institution of Civil Engineers has taken up the subject of reinforced concrete through the committee which it appointed some time ago, and a considerable sum of money has been devoted to experiments which are in process of being carried out, and much advantage should accrue from what may be regarded as the co-operation of that Institute. There is no doubt that experiments are needed in this country with a view to obtaining a consistent and complete series based on materials to be obtained here and mixed and tested under similar conditions. At the present time we have to rely largely on experiments in America, Germany, and France, with cement of varying character and local aggregate.

For some time past the Joint Committee appointed by the Royal Institute of British Architects, upon which we are represented, have had under consideration the revision of their first report, and the revised edition was published several months ago in a much more handy form than before, and at the small price of 1s. It is satisfactory to think that this report, so far as it goes, is accepted generally as the basis of local regulations for governing buildings of this character. These regulations require to be framed in such a way that they can be amended in order to keep pace with the acquisition of fuller and more complete knowledge, which will no doubt come in due time. The importance of being able to do this is shown by its having been necessary for the London County Council to obtain an Act of Parliament in order to make such alterations and additions to its Building Act as to admit of reinforced concrete being used in an adequate way, and so preventing the development for a method of construction which has been proceeding in America and on the Continent at a pace considerably in advance of this country, and at a saving of much money; while under suitable conditions it is a far better method of construction to adopt for safety, as in the case of countries liable to seismic disturbances.

However, with the approval by the Local Government Board of the London County Council by-laws after submission to several societies, including the Concrete Institute, for observations, it may be expected that there will be a considerable extension in the use of reinforced concrete in London, as also in other parts of the country; other cities having also taken steps to admit of such methods of construction being used. Suitable by-laws to this effect remain to be added to the model code.

Architect, Builder, and Specialist.

Having reviewed at some length the various activities of the Institute, Sir Henry proceeded to say that among the useful papers that have been read before the Institute was one by Mr. R. W. Vawdrey, on "The Dissociation of Competitive Designs and Tenders," which is one of much interest to many The methods adopted for obtaining tenders are various, but it is seldom that tenders including design are asked for in any other branch of building than that of reinforced concrete. It is true that as a rule the general scheme is laid out by architects, and that the reinforced concrete designer has only to deal with the sizes of beams and columns, thicknesses of slabs and their reinforcement; but even this involves a very large amount of work where repeated by a number of persons or firms, and it
has to be remembered that quantities hav
to be prepared by the specialist, on
reason being that the drawings are so in
complete that it would be impossible fo
anyone else to prepare them. In the ci
cumstances the quantities must be to som
extent conjectural—a most objectionabl
state of things. Such quantities should o
course be prepared from completed draw
ings and by an ordinary surveyor, as i
the case of other processes of building
if competition is to be fair and on equa
terms. The responsibility for their accu
racy, however, lies between the specialis
and the contractor; but the tendency i
for any deficiency to be saved in som
way, as of course in the case of keen com
petition there can be no margin to provid
for such contingencies. With the arch
tect's plans to work on there seems to b
little opening for much variation whe
the R.I.B.A.' rules have to be applie
Nevertheless, there results very conside
able divergence in the amount of th
tenders submitted on such conditions, an
this would seem to be due partly to th
ordinary differences in builders' tenders, an
partly to the quantities of the work to b
done, of which there may be a dozen diffe
ent sets. This plan avoids the selection
a specialist who is probably interested i
some system, but it involves the emplo
ment of an expert to check the specialis
while the method affords open competitio
for the design and limited competition f
the carrying out of the work. This seen
to be the wrong way about. Fro
an architect's and from a surveyor's poi
of view, the method is not satisfactory, a
it prevents consultation and co-operatic
between the architect and specialist, whic
to the author's mind is essential to a prop
arrangement and to the efficiency of t
building and the best disposition
materials. Competition for design a
construction must involve the utmo
economy, which may perhaps be carried
the verge of safety; otherwise there is ve
little prospect of the work being obtaine
with the result that the labour involved
almost certainly thrown away. Econon
in first cost appeals to most people; b
there are other points to be considere
such as efficiency, and the running of u
necessary risks by which comparative
nothing is gained. The specialists, ho
ever, have the whole matter in their hand
and it is of no use theorising while th
submit their designs and tenders—
rather, builders do so for them—on t
mere chance of obtaining the work. It
almost impossible to make a satisfacto
contract when there are no quantiti
attached thereto, and few, if any, dra
ings, these being left to be approved aft
wards—a course which no one would thi
for a moment of adopting in any oth
branch of building. The sooner t
specialists agree among themselves as
how they are to overcome this grievanc
the better for them and everyone else co
cerned.

The Architectural Treatment of Concret

Much is said about the architectur
treatment of concrete. The subject is
difficult one, and formed one of the ite
to be discussed at the International Co
gress of Architects, but it was consider
that the time was not ripe for any resol
tion to be moved. The great desire is
make the whole building of reinforc
concrete, including the external walls, a
develop some new method of archite
tural treatment. There are many oppo
tunities for this, as in isolated structur
where various methods of surface trea
ment may be adopted; but in town stree

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*Extracts from the Presidential address read at the twentieth ordinary meeting of the Concrete Institute on November 9th, at Denison House, Westminster, S.W.

s doubtful whether anything but stone rick front elevations will satisfy build- owners or ground landlords. It seems ally logical to apply a stone or brick t to a reinforced concrete structure as an ordinary steel framed and concrete . However, perhaps the discussion ch we hope for may produce novel posals.

Fireproofing.

he question of "Fireproofing" was, in aper read at a meeting of this Insti-, most effectively handled by Mr. hard L. Humphrey. This is a direc- in which it might be possible to ain much useful information if mem- s would be good enough to forward to secretary any experiences that they y have knowledge of. There were two nts that were well brought out—the eriority of a reinforced concrete screen l over a brick one from experiences at Francisco, and the effectiveness of ed glass in preventing the spread of .

ith the extension of our scope to in- de structural engineering in its broad ect, we shall have a wider outlook and uture of great usefulness, with a pos- lity of a considerable increase in mem- ship. I therefore conclude with feel- s of the most optimistic character.

NQUIRIES ANSWERED.

urvey of 17th or 18th Century House, South London.

I. B. (Surrey) writes: "Please recom- nd a seventeenth or eighteenth cen- y house for measuring up to meet the uirements of the Intermediate Sur- ors' Examination."

–Eagle House, Mitcham, would appear be very suitable for the purpose de- d. It has been measured before (see "A. and B. J.," 1908-9), so permis- is presumably obtainable; but one is ays dependent on the owner's goodwill such matters. The fine house now oc- ied by Eltham Golf Club would be an ellent subject; influence would prob- y be needed to obtain permission in case. G.

epairs to Buildings, and Duties of a Sanitary Inspector.

. G. C. (Falkirk) asks for particulars to books on these subjects.

–I should suggest that the best book querist can have on general repairs is orge Stephenson's "Repairs: How to asure and Value Them," price 3s. net. e duties of a sanitary inspector are lt with in Stockman's "'A Practical ide for Sanitary Inspectors," price 5s. , postage 4d., and should be a good k to use in conjunction with the other. th these books can be had from Mr. B. Batsford, 94, High Holborn, W.C. X.

Widening a Highway.

. and B. (Staffs) write: "We shall be d to have some light on the following nt. The Local Authority contemplate ening a highway (now varying from 20 30 ft. or so in width) to 50 ft. wide, l forming new streets with the exist- highway as the only entrance and t. The local Town Clerk decides the ding of the law as follows: 'A and B not lay out their intended streets, ess they are prepared to give up suffi- t of their land boarding the said high- , to enable the same road being made ft. in width, and further that the horities can call on A and B to keep the said portion of the extra width required (to give 36 ft. width road), in repair at their own expense, but as the Council require sufficient land to make the said highway 50 ft. wide they suggest A and B shall give up land required for the 36 ft. widening, and the remaining 14 ft. to be purchased by them.' We have our doubts on this, considering the road they propose to widen is an old highway, and not a new street, the highway having been in existence for over a century; any information you can furnish through your columns will be highly esteemed. Will it not be necessary for the Local Authority to purchase all land required for widening road?"

—No new street, intended for a carriage way, may be laid out (in a district possessing by-laws) which is less than 36 ft. in width in every part, and which has not an entrance at one end at least of the full width of 36 ft. This by-law, however, only applies to the new street itself—it may end in the veriest lane if that lane is an existing highway repairable by the public at large. It is quite clear that the Town Clerk is right so far as the side streets which you propose to lay out are concerned, and in this respect I believe your plans comply with the by-laws. With regard to the old public highway, I am of opinion that the by-laws have no application whatever, because you are not laying out a new street at all (though willing to sell land to the authority for the purpose of widening an old one). You have a perfect right (1) To build houses facing the old highway, even though it is only from 20 to 30 ft. wide; (2) to make streets opening into it wherever you please, provided that those new streets themselves are in accordance with the by-laws. It will be necessary for the Sanitary Authority to purchase all the land they require for the purpose of widening their existing highway. It is quite true that there are circumstances under which a person altering an old highway may be legally deemed to be "laying out a new street," but this is not such a case. F. S. I.

Silver-grey Appearance of Half-Timber Work.

GREY GRAIN (Essex) writes: "Will you please say how the grey appearance one sometimes sees given to half-timbering can be produced?"

—The silver-grey appearance of oak half-timbering cannot be artificially imparted. It results from the action of the weather on timber untreated in any way. About a year's exposure is generally sufficient to produce the effect in limited degree, after which it will continue to improve if untouched. Adzed surfaces weather better and more quickly than sawn, which are apt to pass through a period of black-stained unsightliness before developing the grey tinge so universally admired. G.

Chepstow's Norman Church.

In 1889 the then Vicar of Chepstow, the Rev. E. J. Hensley, took steps to have the ancient Norman Church of St. Mary restored, and the ancient nave was restored. At successive periods the chancel was elongated and restored, the transept cross reformed, and the south transept restored. Some £8,000 was spent on the work, which left a debt, which was cleared off in 1909. To complete the restoration—that is, to add the north transept and re-build the aisle—it is estimated that another £4,250 will be required, and steps are being taken to raise the money.

THE MEMORIAL TO ALFRED STEVENS

At the Tate Gallery last Wednesday, Sir William Richmond, R.A., acting on behalf of the Alfred Stevens Memorial Committee, presented to the Trustees of the National Gallery a bust of Alfred Stevens and a cast of the chimney-piece at Dorchester House. The committee was organized under the presidency of Professor Legros, with the Countess Feodora Gleichen and Miss Harrison as secretaries, with a view to placing a permanent memorial of the artist in the Tate Gallery. There was also a loan exhibition of Alfred Stevens's works, which is now open to the public.

Sir William Richmond, in making the presentation, said that this tribute to the genius of a great English artist was due in no small measure to the initiative of two distinguished Frenchmen—Professor Alphonse Legros and Professor Edouard Lantéri, the latter of whom generously gave his services in designing the bust. Stevens's art, said Sir William, fulfilled the highest conception of the function of art, and Stevens was a pioneer in the revival of arts and crafts, with the motto of "One Art Only"—the art of design. Alfred Stevens exercised his gifts as a designer at a time when arts and crafts were dissociated. Lavish of imagination, true throughout to his convictions of what perfection meant to him, Stevens stood, in the estimation of those that knew good art from bad, in the company of Michelangelo, Benvenuto, and Quintin Matsys. To say that he possessed a sense of style as distinguished as any modern artist was no exaggeration. Beneath the individual he found the universal. Only a superficial critic could misconstrue the monument to the Duke of Wellington, and translate it into Italian work of the 16th century. The reason of the final assurance of Stevens's reputation, after a life of storm and stress, was, he thought, his hereditary seriousness, his reverence for the works of the greatest masters, combined with a temperament of singular comprehensiveness, his indomitable will, and his commanding love for all forms of artistic expression. The gathering that day would not have taken place if there did not exist a large company of artists, connoisseurs, and the public who still regarded art as a serious vocation, and as a teacher not only responding to but guiding emotion to a sane issue. Fashions were fugitive, but great art was eternal; Stevens was a great artist, hence his work would endure, for it was true, pure, scholarly, and impressive.

Lord Plymouth, in accepting the bust on behalf of the Trustees, and thanking the committee and M. Legros and M. Lantéri for their services, observed that Alfred Stevens was neglected to some extent much more after death than when he was actually living and working, and he (Lord Plymouth) imagined that the reason for that was very largely the fact that the public were ignorant only, and not unappreciative. It was very difficult to see or to realize any work of Stevens, except the Wellington Monument, which in the days he was speaking of was so wrongly placed in St. Paul's Cathedral that it was almost impossible to appreciate its merits. But times had changed, and they now were ready to do all in their power to present to the public the work of Alfred Stevens so that he might be appreciated in this country.

FIRE PREVENTION NOTES.

L.C.C. Fire Brigade Items. Details of but small importance and less interest usually make up the bulk of the periodical reports of the Fire Brigade Committee of the London County Council; but it is necessary to peruse them regularly if one desires to be kept fairly well informed of what is being done for the protection of London from fire. From recent reports we cull a few items of interest. It has been decided to place at the chief station of the Fire Brigade a new petrol motor fire-engine in substitution for one of the horse engines. This arrangement will enable the contract price for the supply on hire of horses at the chief station to be reduced by £134 8s. a year. The tender of Messrs. Kerridge and Shaw, Dane's Inn House, 265, Strand, W.C., amounting to £1,555, for the execution of structural alterations at the Whitefriars fire-station, including the provision of quarters for single men, the provision of sliding poles, and the overhauling of the hot and cold water-supply system, has been accepted. Expenditure not exceeding £100 has been sanctioned in respect of the erection of a steel drill tower and the formation of a coal shoot to the station officer's cellar at the Bethnal Green station; the work to be executed by Messrs. F. and T. Thorne under the jobbing schedule. Expenditure not exceeding £565 has been sanctioned for fixing a double hydrant in substitution for a single hydrant in Euston Road; for a similar substitution in St. John's Street (Northern district) and in Sloane Street, Chelsea; for eight single hydrants in various new roads on the Old Oak estate, Wormwood Scrubs, and one in Dalton Road, Fulham; two double hydrants and two single in the neighbourhood of High Street, Putney; and three double hydrants and one single hydrant, abolishing two existing single hydrants, and making various alterations to eighteen existing single hydrants in Coldharbour Lane, Effra Road, Water Lane, and Dulwich Road; and a single hydrant in Dunvegan Road, Eltham. All this work is being done by the Metropolitan Water Board. It is noted that between July 24th and October 16th inquests were held in sixteen cases of death from fire in London, and that nine of the persons who lost their lives died or were removed from the premises in which the fire occurred before the fire brigade was called or notified. During the three months ended September 30th, 102 false alarms of fire were maliciously communicated, and only in seven cases were prosecutions instituted.

Direct Employment of Painters. The L.C.C. Fire Brigade Committee have had under consideration the question of making permanent the existing temporary arrangement (1) for the cleaning, painting, etc., of rooms at the chief station of the Fire Brigade, and (2) for the painting of certain fire appliances. It is stated that for many years these works have been carried out under the direction of the Committee by direct employment of labour, the Council having given temporary authority for these purposes in each year since 1900 and 1902 respectively. The existing arrangements have been found most convenient, as they enable the work of painting, etc., at the chief station to be spread over the whole year, thus obviating the necessity for displacing a large number of families at one time, while the work of painting appliances consists of a large number of small jobs. The number of painters employed is at present four, three being engaged on the station work and one in painting appliances. The Committee recommend the continuance of this arrangement; the four painters to be paid each at the rate of 8½d. an hour. Similar policy is pretty general in fire brigades throughout the country, and is always defended on much the same lines; but in many places the work is not even done by painters at all, but by the firemen, who are thus preserved from yawning idleness. These pleas of expediency, however, will not appeal very powerfully to the employer of labour; nor, in the case of the provinces, to the journeymen painters, whose trade union branches have often protested against the policy, with but little success.

Fire Brigade Calls. There is little doubt, the Fire Brigade Committee of the London County Council report, that in many cases the Fire Brigade is not called until some considerable time after a fire breaks out, with the result that it attains considerable proportions before the brigade can arrive. The danger to life, as well as the risk of adjoining property becoming involved, are in such circumstances greatly increased, and the Committee desire to emphasize in the strongest manner the importance of the brigade receiving the earliest possible notification of a fire, however small, instead of being called, as is often the case, only after the occupiers of the premises have unsuccessfully endeavoured to extinguish the outbreak. In the case of small occupiers, the reluctance is generally due to an exaggerated fear of having to meet the expense of a call, and we would therefore suggest to the Committee the advisability of making generally known, by placard or otherwise, the true conditions, and of publishing at the same time a warning as to the penalties attaching to neglect and to false calls; some of which, we suspect, are due not to maliciousness, but to concealment of the source of the call when it is found that an outbreak can be privately suppressed. The Committee complain of the frequent exaggerations by the public of the time that elapses between the call and the response. These complaints are so very natural that they are nearly always made, and they need therefore never be taken very seriously unless they are supported by undeniable proofs; the obvious inference being that when one is helplessly watching the rapid progress of a fire pending the arrival of the brigade, every minute is magnified about tenfold. This estimate is apparently confirmed by an actual allegation and its correction. The Committee state that the brigade arrived at the scene of a certain fire three minutes after the call; whereas it was complained that the time that elapsed between call and arrival was twenty-eight minutes. No doubt it seemed like twenty-eight minutes; but this expansiveness of the anxious mind must always be taken into account in considering the resultant accusations of undue delay.

Petrol Through Pipes. There is being put forward a serious proposal for laying on petrol supplies through pipes. A writer in the "Times" thinks that the materialisation of this scheme—which contemplates the laying of one or more pipes from the estuary of the Thames to the scattered districts of the Metropolis—would be open to grave objection. He seems to think that the public sense of the dangerous character of petrol has been lulled by the immunity from accident that has been secured by the strict observance of very stringent regulations as to handling and storage. "The truth is," he says, "that the stringent regulations now in force governing the conditions of storage and transport of petrol have been so effective that the public are scarcely aware of the fire risks that would follow if petrol were under less perfect control. Even within a restricted area, the conveyance of petrol through pipes in the neighbourhood of public thoroughfares would be open to grave objection. In any such pipe system some amount of pressure would be necessary, and it does not require much imagination to picture what would happen in the event of a leak at a joint, the fracture of a pipe, or the failure of a valve!" The risks from the pipe-conveyance of coal-gas are serious enough; but the complications from pipe-conveyed petrol are simply too awful to contemplate.

Country House Fires. Haggerston Castle, Northumberland, which has been almost completely destroyed by fire, contained about seventy rooms, and had been rebuilt by the owner, Mr. C. J. Leyland, fifteen years ago, at a cost of more than £100,000. The main building was burnt out, all but the ground floor, which was of fireproof construction. The fire seems to have broken out in the top storey, but as to how it originated there is no satisfactory or conclusive information. Fires at country mansions have been of late so frequent, and have caused so much destruction of priceless treasures, such as the pictures reported as having been destroyed at Haggerston Castle, as to point a very obvious moral, upon which it would be tedious and quite superfluous to expatiate—namely, that in the rebuilding advantage should be taken of every available detail of modern fire-resisting construction; and we venture to repeat a suggestion that we have frequently made, to the effect that periodical inspection of such buildings by a properly qualified architect and surveyor, having expert knowledge of fire-protection methods, would prevent manv a disastrous outbreak, and would thus be, on the whole, an economical arrangement.

Courts and Alleys. A recent fire in the City might possibly have been extinguished earlier, but for the hindrance that the Fire Brigade must have suffered in having to get to work in a typical narrow court. Such courts are doubtless very interesting survivals—as to the site, although the buildings about them are as a rule of modern date—of old London; but they offer so many practical inconveniences that their disappearance would not be greatly regretted. Their immediate abolition, however, is too much to hope for. Fleet Street, for instance—in which district the fire in question occurred, and assumed such proportions as to require the attendance of about forty engines and 300 firemen—is riddled with narrow courts and alleys which, being of extreme value both commercially and historically, are likely to survive the most enthusiastic era of town-planning. It therefore follows that all possible measures should be taken for mitigating the ecial fire risks that such cramped and metimes complex situations involve. r one thing, the use of fire-resisting ass in the windows of buildings facing ch other on opposite sides of a narrow urt would often prevent the spread of e from one side of the court to the other, d would at least help to prevent the outrst of flames from the windows until e firemen could get to work. But such ecautions will not be general until they e made compulsory; and we certainly nk that this is one of the cases in which, the public interest, compulsion would justified. The effectiveness of wire ass in preventing the spread of fire s been abundantly proved; and, as Sir enry Tanner remarked in his presintial address to the Concrete Institute, is point was well brought out by Mr. chard L. Humphrey, of Philadelphia, the paper on "Fire-proofing" which he ad at a meeting of the Institute, and of ich an abstract appears below.

OINTS IN FIREPROOFING.*

By RICHARD L. HUMPHREY,
Philadelphia, President of the [American] National Association of Cement Users.

America has, as you all know, the proud stinction, if you wish to put it in that y, of having the greatest fire losses in e world. The losses in America are ormous, and each succeeding year does t seem to bring an appreciable decrease the losses. Where the losses in Europe e reckoned in cents, the capital losses in nerica are reckoned in dollars—nearly times the average loss of Europe. It uld seem, therefore, that it was rather congruous for an American to come and k to a country that is particularly low fire losses on the subject of fireproofing.

Lessons from Losses

But I think if you bear with me a nute you will see that perhaps the very t that we have such enormous losses in nerica has led us to study this subject of eproofing and fire prevention. It has en a necessity to find out ways and ans to prevent this enormous annual struction of building materials by fire.

The mere fact that, looking across the eat pond, you find the losses are much eater in America than here, is no reason y you should be self-satisfied and not ive to present the losses that you do ve here.

We find in America that it is necessary have buildings of high fire-resistance; d then it is necessary to provide a means putting out conflagration of the conts. I find in contrast that in America erect, under our rather poor building vs, that are promulgated generally, ldings of a low fire-resistance, and we uip our fire departments with magnifit fire-fighting appliances and highssure water systems, and the country subjected to a great annual tax for the intenance of this expensive fire-fighting tem.

The annual losses are not by any means resented by the annual destruction of perty. In addition to the destruction property and building materials, there he annual tax that is necessary for the keep of the fire-protection service, and n the additional tax that comes from the very high rates of insurance; so that, year by year, the total losses from fire, which I believe are entirely preventable, are represented by a great deal more than the two or three dollars *per capita* which is merely the value of the property destroyed.

The Pecuniary Importance of Fireproofing.

I think it is regrettable, when you come to think of it, that this property that is once destroyed is a permanent destruction. The lumber and other matters that go into the buildings is permanently destroyed; and we feel in America that where the question of the concentration of the resources is receiving so much careful attention, it is of the utmost importance that we should study the conservation of our building materials; so that I think now generally throughout America there is a tendency to revise the building laws for the purpose of ensuring the erection of better structures. But, of course, it is impossible to make those laws in a large measure retro-active, and there must necessarily exist for many years to come buildings which at best can only be described as tinder-boxes.

Some Notable Fires.

Of course, in America great conflagrations have occurred. The one in Chicago was perhaps only second to that in San Francisco; but in Boston in 1872 and Baltimore in 1904 conflagrations of great size, which destroyed property worth millions of dollars, occurred, but were only small in comparison with the large area of Chicago and San Francisco. In Baltimore the fire-fighting service from Philadelphia, New York, and Washington were practically powerless, because in the extremely cold weather which prevailed at that time the water service was of little value. It is interesting to note that in the San Francisco fire it is estimated that the profits of twenty years were destroyed in a fire of three days' duration.

It frequently happens that the walls of a structure are standing after a fire, and people point to those walls as an evidence of the fact that the building has satisfactorily passed the conflagration. It often happens that the walls are of concrete, and after the fire are in good shape, and only require a renewal of the floors, doors, windows, and roof to make a habitable dwelling.

The Behaviour of Reinforced Concrete.

It frequently happens that the floors and columns are fireproof, but the front walls —of cast iron frame construction—are destroyed, or the walls of brick all fall down. One of the best examples in America of the behaviour of reinforced concrete in a serious conflagration was the building of the Guarantors' Trust Company of Baltimore, and load tests were made on those floors, after the fire, by the Building Department. They were found to be amply safe under the ordinary building laws. In the destruction of the adjoining building, opportunity was afforded for the construction of a modern building, and it became necessary to tear down the rebuilt structure because it did not fit in with the new structure, otherwise it was in very good condition.

Studies in Stone.

Stone is very largely used, not only in this country and in America, but all over the world, as an ornamental material, and it is evident, I think, that the subject of natural building stones should be studied with a view to determining their resistance to fire. The United States Government have undertaken some studies of this kind, and they have found that it makes a material difference as to how the stone is quarried in its fire resistance. They found that granite can be quarried so as to offer almost 100 per cent. greater resistance to fire in one direction than it does in the other direction; so that in the matter of ornamental building stones there is much to be learned in the manner in which the stone is quarried from the point of view of its fire-resistance. Of course, in a building of this kind the destruction cannot be estimated. The mere fact that the skeleton remains is not very much consolation. If stone is to be used as a structural member of a building, it must be fireproof just the same as a steel member shall be fireproof.

Improperly Protected Steel.

In nearly all the great conflagrations which I have visited—and I have visited most of them in America—it is a frequent sight to see buildings of steel which have not been properly fireproofed entirely destroyed; and it is evident, I think, that something must be done to protect that material; for while steel may have great strength at normal temperatures, it has little or no strength at high temperatures. Then, again, it frequently happens that the floor of a structure may be reasonably fireproof and constructed properly, but the failure of a column to support the floor causes a collapse.

It is a striking fact that architects and people in general in America regard burnt clay as an admirable fireproofing material, and I think in a large measure this opinion has been based on the fact that small pieces of burnt clay, when placed in a fire and made hot, then thrown into water, are not disintegrated. But the clay is not used in that way. It is used in the shape of a tile. In the process of manufacture it often happens that these tiles are cracked in the corners; and when a column which is fireproofed is subjected to the action of heat the unequal expansion of the outer face of the tile contrasted with the inner face against the steel causes an expansion which the thin web at the corner is unable to resist, and the tile and the web crack. As a result, the tile is broken away from the column, and the column is left to the action of the heat and collapses.

The floor, of course, is an important structure. If the column is reasonably fireproof, it is necessary that the floor shall be fireproof. The suspended ceiling found in the San Francisco and Baltimore fires acted as an excellent shield, and greatly increased the fire-resistance of the floor. Unfortunately, in carrying out this idea in America, it frequently happens that ordinary gypsum or plaster is used, and the gypsum loses its life at a very low temperature, and the ceiling falls.

Roof Trusses.

It generally happens that the roof trusses of a building are never protected. The upper ceiling is rendered reasonably fireproof; but the steel trusses of the roof are not protected, and as a result it frequently happens that the roof becomes the entry for a fire from the outside. It is just as necessary to protect the steel-work of the roof as it is to protect any other part of a structure.

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bstract of paper read at the nineteenth ordinary ral meeting of the Concrete Institute, held at ison House, Westminster.

Protection of Openings.

In most cities we find that there are buildings of large size that are reasonably fireproof. They are monumental in their construction, but they are surrounded by fire-traps; and this is particularly true in our large cities in America, where we have buildings that are extremely high, and which, if they were properly protected with metallic window frames and door frames, and fire-glass windows, would probably act as a barrier; but with unprotected plain glass and perhaps wooden frames, the destruction of the tinder-boxes that surround them brings about the destruction of the contents of the buildings, and of the buildings themselves.

It is not only necessary that the floors and columns of a building shall be properly protected against fire. It is also necessary that the exterior exposures shall be protected. It frequently happens that the windows are perhaps metal frames protected with terra-cotta or some similar fireproofing, and the destruction of those windows leads to an easy access for the flames to spread from floor to floor and leads to the entire destruction of the building.

In some cases where metal doors and windows were used and plain glass used in the windows, the glass simply softened and fell down, and so of course the barrier was of little value. On the other hand, when the window is constructed with metal frames and wire glass windows of approved type, the glass often softens, but still stays in place, and prevents the fire from gaining access to the building.

The Virtues of Concrete.

I believe personally that concrete is going to play a very important role in the question of fireproof construction of the future; and it was for this reason that I took for my subject to-night in addressing this Institute the subject of fireproofing, because I believe that the Concrete Institute of England and the concrete organisations of America have a very important responsibility, and a very important task before them. We know that concrete is reasonably fireproof. We do not know much about its properties or the methods of the construction from the point of developing buildings of the highest fire-resistance. It is a fact in America that in a report of the various concrete buildings that have been erected during the last five years, the owners of 23 per cent. of the buildings reported that they carried no insurance on the buildings themselves—that they merely insured the contents.

Now in a building of concrete, when properly constructed, there is a building of the highest fire-resistance; but unfortunately there is a tendency to design the structural parts of a building without providing any fire protection. It is just as necessary to provide fire protection for the concrete member in the strucure as it is for a steel member, a wooden member, or a stone member. There is no doubt that different aggregates have different rates of expansion, and that these different rates of expansion cause a proportionate destruction of the concrete.

A discussion followed, in which Messrs. E. O. Sachs, E. Fiander Etchells, William G. Kirkaldy, E. P. Wells, and Sir Henry Tanner took part.

In reply to questions as to what he meant by protecting the concrete, Mr. Humphrey explained that an exterior casing of cinder concrete or slabs of limestone coated with plaster would fulfil this purpose.

SOCIETIES AND INSTITUTIONS.

MANCHESTER SOCIETY OF ARCHITECTS.

An Informal Chat by Mr. J. J. Burnet.

The sessional papers meeting on November 8th was held on somewhat novel but distinctly interesting lines. Mr. J. J. Burnet, F.R.I.B.A., who was the visitor for the evening, instead of reading a formal paper, led what was announced as an informal discussion, mainly upon points arising from an exhibition of drawings of his own work, which had been on view for a few days. In opening the discussion, Mr. Burnet said that they were there that evening in a spirit of *camaraderie*. He would say that his works there shown represented genuine pleasure in solving problems placed before him by his clients. It had been his privilege to work for clients themselves highly trained technically—shipbuilders and mechanics, who clearly enunciated the problems set before him. He also spoke of the pleasure which he had always found in travelling in pursuit of knowledge to equip him for his work.

In the course of the conversation which followed, Mr. Burnet outlined the inception of the scheme of extension of the British Museum. The splendid drawings of the work provided fruitful ground for discussion, and the way in which the minutest details had been thought out was in many ways a revelation.

Besides the drawings of the Museum, photographs and details of many other works of Mr. Burnet were exhibited.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

President's Views on Town-Planning.

At the opening meeting of the new session of the Sheffield Society of Architects and Surveyors at the Sheffield University, the President (Mr. J. B. Mitchell Withers, F.R.I.B.A.), in the course of his inaugural address, referred to the approaching 25th anniversary of the society, and he said that during the period that had elapsed since the society was founded nothing was more marked than the recognition by both branches of the profession with which they were in touch of the power of combination and organisation for good, and the education of those who were to follow them as architects and surveyors.

Touching upon the question of town-planning, he said it was chiefly an economic question, and while for health's sake open spaces and airy dwellings were needful, they must not forget that the house was the shelter of the family, and must always be the chief consideration in a well-planned city or town. Wide streets with costly pavements were secondary to healthy houses and play-grounds as open spaces.

So far as the city of Sheffield, the largest in Yorkshire, was concerned, he expressed the hope that the wisdom and foresight of the members of the City Council might be such that the city, with its natural and beautiful surroundings, might be fated to hold the position in their great county to which it had so rapidly risen. He expressed regret that the architectural classes at the University were not taken greater advantage of.

The work executed by students in the Department of Architecture at the University was inspected, and the members were very gratified at the all-round excellence of the specimens exhibited, the improvement in the measured drawing compared with those of previous year being especially noticeable.

The Charm of Oxford.

Under the auspices of the Society, M W. S. Purchon, A.R.I.B.A., lecturer o the Department of Architecture at th Sheffield University, recently delivered lecture on "The Architecture of Oxford.

After referring to the value of a visit t Oxford as a source of inspiration for arch tects, the lecturer proceeded to dea chronologically with some of the fin buildings for which the city is so famous including, among others of the Gothi period, the Cathedral, the Chapel of Merton College, the spire of the church of S Mary the Virgin, and the tower of Magdalen. He next drew attention to some o the buildings of the Jacobean period, suc as the tower of the Bodleian Library, wit its wondrous treatment of the Orders, an the extremely beautiful garden-front o St. John's. Reference was made to th porch of the church of St. Mary the Virgin, and following that Wren's Sheldonia Theatre, and the interior of the chapel o Trinity.

The plan of New College, the first o the colleges built as a complete scheme, was examined, and its influence on late college planning noted. It was also show that Wren wisely objected to the close quadrangle, and abandoned it. Building by Vanbrugh, Hawksmoor, Gibbs and th amateurs, Aldrich and Clarke, were nex considered, Gibbs's fine Radcliffe Librar calling for special attention.

In dealing with the work of the Gree and Gothic revivals, the lecturer pointe out that in the 18th century it was onl lack of funds that in many cases save beautiful Gothic work from destruction and that the architects of the Gothic revival often had as little respect for Renaissance work. He hoped the present proposal to pull down Butterfield's chapel a Balliol, and to replace it by an imitation of the one which was removed in 1856 would prove to be the last chapter in th history of vandalism. If those in authority did not appreciate Butterfield's work they must at least realise that those who destroyed works of art in the 18th and 19th centuries had the same excuse to offer, in addition to the one that the buildings which displeased them were often no in the best of repair.

The lecturer then touched on some of the many beautiful buildings which have been erected recently, including work by Mr. T. G. Jackson, Mr. Basil Champneys Mr. Hare, Mr. Warren, and Mr. Reginald Blomfield.

"Let us now imagine," the lecturer concluded, "that the visitor's last half day in Oxford has arrived. He will do well, I think, to re-visit Magdalen, to see once more its beautiful tower, to walk down 'the stream-like windings of that glorious street' to the Church of St. Mary the Virgin; then by way of the Radcliffe Camera into Broad Street, and so to the interior of Trinity Chapel; and, finally, I would have him spend an hour in the gardens of St. John's, leisurely examining the garden-front of that college. So that it will be with thoughts of these beautiful buildings that he takes leave of 'that sweet city with her dreaming spires.'"

GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE.

Annual Report.

In the annual report on the 115th session of this college it is shown that, as compared with the session immediately preceding, the number of day students hll increased from 523 to 560, while the evening students increased in numbers from 4,944 to 5,152. The roll of students contained the names of 15 graduates of the four Scottish universities, and of the universities of Cambridge, Leeds, London, Calcutta, and Sydney. There were in the Architecture and Building Trade Departments 72 enrolments of day students and 684 enrolments of evening students. One student was awarded the joint diploma of the School of Architecture, seven qualified for the senior certificate, and three for the junior certificate. The external assessors for the joint diploma were Mr. Reginald Blomfield, F.R.I.B.A., and Mr. J. B. Wilson, F.R.I.B.A. New courses for the current session include an evening course in the Department of Civil Engineering on Reinforced Concrete Construction, and in the Department of Technical Chemistry, an evening course on oils, paints, and varnishes. The completion of the college building is now reported, the fourth and final sections having been finished in October, 1910. The complete structure contains 7,292,382 cubic feet, and the cost, exclusive of site, has been under 9d per cubic foot. The floor space measures 308,600 square feet, or more than seven acres. The architect was Mr. David Barclay, F.R.I.B.A.

NORTHERN ARCHITECTURAL ASSOCIATION.

The President's Review.

Mr. H. C. Charlewood, F.R.I.B.A., of Newcastle, who has been re-elected President of the Northern Architectural Association, last week delivered his presidential address at the Association's premises, 6, Higham Place, Newcastle. It was the opening meeting of the session, and an interesting matter was the exhibition of drawings and sketches made by Mr. W. W. Nimmo, the Glover Student, [illegible] during his recent tour in Lincolnshire.

The President expressed his pleasure that the membership was well maintained. There were 89 members, 94 associates, and 46 students, which was a slight increase on a year ago. He referred to the death of Mr. James Pigott Pritchett, of Darlington, who was one of the founders of the Association, having joined it in 18[illegible]. The state of the building trade, in the North of England at any rate, had not shown any great improvement during the past year. Few buildings of note had been commenced, and there had been very little private enterprise, except in the matter of picture halls, which seemed to spring up like mushrooms in every quarter, and, so far, had proved to be popular places of amusement. One compensation for the slackness of the times was that, in this year of gigantic strikes, they had had no strike of any importance in the building trades. Shipbuilding had revived on Tyne and Wear, and they hoped that another year would see an increased demand for bricks and mortar in all the Northern towns.

During the year, the Newcastle Corporation had co-opted two of the members of the Association, Mr. F. W. Rich and Mr. J. Oswald, to assist upon their Town Planning Committee.

He regretted that the Newcastle Corporation were unsuccessful in getting passed the clauses in their Bill for the restriction of advertisements. He suggested that advertisements should be confined to the limits of certain frames provided for the purpose.

He referred to the possibilities of steel for structural purposes, and said that, in an age of steel, it behoved architects to keep their eyes open to these possibilities. If buildings with visible steel construction became the order of the day, he thought that covered ways would follow, as being specially adapted for the buildings of that nature, and these, he was sure, would be very popular for shopping centres. He advocated a decorative treatment of the external surface of the reinforced concrete buildings.

THE SOCIETY OF ARCHITECTS.

Opening of the New Session.

The first ordinary meeting of the new session was held at 28, Bedford Square, on November 16th, which was preceded by the annual meeting of the students for the election of the committee and officers for the year.

The chairman of the students' section, Mr. H. V. Milnes Emerson, A.R.I.B.A., presided at the students' meeting, and was re-elected, as were also the members of the committee.

The President of the Society, Mr. G. E. Bond, J.P., then took the chair, and the minutes of the previous meeting having been confirmed, the proceedings opened with the nomination of twenty-six candidates for membership and five for the register of students.

The ballot for new members and students resulted in the election of twenty-nine members and nineteen students. The President then handed to Mr. J. R. Leathart, the winner of the Society's travelling studentship, 1911, the silver medal and a cheque for £10, the latter being the balance of the award of £25. The hon. auditor, Mr. Ellis Marsland, presented the auditor's report and balance sheet for the year ended October 31st, 1911, and stated that there was an increase in the revenue over last year of £666, due principally to the increase in the membership, the membership examination candidates and on the revenue from publications. The general expenses had naturally increased somewhat owing to the maintenance of the establishment and new premises, but there was nothing to call for particular comment in regard to the expenditure, and the net result was a surplus for the year of £626, which was a record for any year. The total surplus of assets over liabilities was £2,626, and the loan from the bank had been reduced during the last fortnight from £1,500 to £1,100. Mr. Marsland proceeded to refer to the progress of the society during the past thirteen years, as shown by a chart which had been prepared by the secretary. This showed that that annual income had risen during that period from £710 10s. to £3,222, the subscriptions from £559 to £1,886, the entrance fees from £8 to £285, and the membership from £530 to £1,076.

The auditor's report and balance sheet having been unanimously adopted, the President addressed the members on the position of the Society both in relation to the Royal Institute and the question of registration.

BRISTOL SOCIETY OF ARCHITECTS.

Opening of the Session.

A meeting of the Bristol Society of Architects was held on the evening of the 8th inst, at the Fine Arts Academy, Clifton. It being the opening night of the winter session, a good company assembled at a conversazione on the invitation of the President (Mr. J. Foster Wood, F.R.I.B.A.). On the walls of the central gallery were hung a very interesting collection of architectural studies and travelling sketches. Many of these were dated about 1860, having been made by the late Mr. Joseph Wood, the father of the president. Other contributors were Mr. G. C. Awdry and Mr. W. V. Gough. The drawings were closely examined, and very much admired by those present. Refreshments were served during the evening, and at the conclusion, on the motion of Mr. Mowbray Green, seconded by Mr. R. C. James, a hearty vote of thanks was accorded to the president.

EDINBURGH ARCHITECTURAL ASSOCIATION.

Attainable Ideals in Architecture.

Mr. James A. Morris, architect, Ayr, last week delivered the opening lecture in connection with Edinburgh Architectural Association. His subject was "Attainable Ideals." An opening lecture, he said, was perhaps best general in range rather than specific, and there might be an ideal on the practical and business as well as on the architectural side of work. An ideal might be of little or great altitude, but to have an ideal at all was to ensure that work could not be altogether poor. The beginnings of art, the desire after the unseen and unknown in primal days, the same elemental desire of, in different environment, touching men still, and the abstract qualities of dignity, beauty, power, and reverence were but different notes sounded in different ages on the human chord of emotion and feeling. Keeping cost of work within the range of a client's purse and purpose, setting face against architects asking contractors to reduce tenders, and allowing work to be done at prices which could not pay, all militated against good work, and if done with the archi tect's cognisance inferentially there was hardship or rejecting all but the best work. Art again, besides being creative, was also in no small degree selective, while in yet another phase it was even the visible embodiment of silence. A weak man or a guilty was full of excuses, while strength and innocence were often dumb. Well would it be then for them also so to think in their own art, for in architecture there was marvellous virtue in the silence of a plain, or an unbroken wall.

CARNEGIE LIBRARY FOR LINCOLN.

The library which is to be erected at Lincoln through the generosity of Mr. Andrew Carnegie, who has made a gift of £10,000 for the purpose, will stand in Free School Lane, Lincoln. The design is by Professor Reginald Blomfield, A.R.A., F.S.A. It is designed in seventeenth century style, and is to be built of Ancaster stone. In preparing the designs, Professor Blomfield gave careful attention to the conditions of the site, to the adjacent buildings, and to the background of the cathedral on the hill. Owing to the conditions of the site, the silhouette of adjacent buildings and the background, he considers that a low but substantial building, emphasised by a central dome, would be most suitable. The materials which it is proposed to use for the structure are Ancaster stone facings for the two elevations most in evidence, Westmorland slates for roofs, solid floors throughout, with pitch pine blocks for news and magazine and ladies' rooms; Ruberoid for hall, corridors, lending library, reference, committee, and librarian and staff's rooms; tile floors for lavatories, trowelled cement for book store, strong room, and heating chamber; deal joinery. The entrance will be in the centre of the street façade in Free School Lane, and it will open into a hall 24ft. by 24ft., with entrance to the newsroom on the right, and to the reference library on the left. The accommodation on the ground floor, in addition to the entrance hall and reference library (to take 10,500 volumes), will include news room 60ft. by 27ft.; ladies' room, librarian's room, strong room, lending library, the staff-room, book store, etc. It is hoped that the building will be commenced next April.

NEWS ITEMS.

Architectural Studies at Cambridge.

Dr. Waldstein, in resigning the Slade Professorship of Fine Art at Cambridge, has offered £1,000 towards the advancement of architectural studies.

Fire Tests with American Doors and Partitions.

The British Fire Prevention Committee next month will undertake tests with some fire-resisting doors and partitions from the United States.

Change of Address.

Mr. C. Orlando Law, M.S.A., Lic.R.I.B.A., architect and surveyor, announces that he has changed his address from Dacre House, Arundel Street, Strand, W.C., to 15, Rossetti Mansions, Cheyne Gardens, S.W.

Coronation Window at Kingscliffe Church.

A window that has just been fixed in Kingscliffe Church, Northampton, in remembrance of the Coronation of the King, is situated in the south aisle, and the subject is the Via Dolorosa. The window consists of three lights and forms a companion window to an adjoining one representing the Crucifixion. The tracery lights contain angels with scrolls. The artists are Messrs. C. E. Kempe and Co., of London.

The London Drawing and Tracing Office.

The London Drawing and Tracing Office, which has been carried on for over a quarter of a century by Mr. John B. Thorp, has opened a new City branch at 48, London Wall, opposite Salisbury House, where architects, engineers, surveyors, etc., whose business is in the City, will find it more convenient to send in their work than the head office, 98, Gray's Inn Road.

Manufacturers' Agency in Japan.

We are informed that Messrs. Richardsons, of Billiter Square Buildings, London, E.C., have just been appointed London representatives of Messrs. Tait and Co., Kobe, Japan, who are opening an engineering department. Firms desirous of finding a market for their manufactures in Japan and the East should send their catalogues in duplicate to Messrs. Richardsons' "Export Dept."

Proposed Museum of Black-and-White Art.

The project outlined at the London Salon of Photography for a national school of black-and-white art has now taken the ambitious form of a proposed memorial to King Edward, with the raising of the old General Post Office at St. Martin's-le-Grand to the dignity of a gallery in which to house the new collection. Mr. Frank L. Emanuel, the well-known collector of prints, etchings, and engravings, and a prominent authority on black-and-white art, is said to be the prime mover in the present scheme, and is extremely confident of its ultimate establishment.

Alfred Stevens Exhibition.

An exhibition of work by Alfred Stevens has been opened at the National Gallery of British Art, Millbank, from November 16th, until January 15th, 1912. By permission of the Trustees of the National Gallery, the Committee has obtained the loan of a number of works, including portraits, decorative sculpture, and drawings, and these are grouped in Room XVIII., together with the work of Stevens that already has a place in the collection.

Tudor Mansion Exported.

It is stated by the New York correspondent of the "Daily Mail" that the first half of an old Tudor mansion purchased in Suffolk, England, by Mr. J. N. Phelps Stokes, of the Smelter Trust, has arrived there by a tramp steamship, and will be sent to Mr. Stokes's estate in Connecticut. The second section will arrive next spring, and the whole will be rebult exactly as it was in the original. It will be the ninth wing of a "freak" mansion which Mr. Stokes is having built.

Mansion as Sanatorium.

The Local Government Board have approved of the scheme of the South Manchester Guardians for acquiring a mansion and an estate in the neighbourhood of Abergele, North Wales, for the treatment of convalescents and of sufferers in the first stage of consumption. The opposition of the local governing bodies of Abergele has been overruled. It is said that the expenditure of a few hundreds of pounds, will be sufficient to effect the conversion.

New Botanical Laboratories at Manchester University.

The new botanical laboratories at the Manchester University were formally opened on November 3rd by Dr. D. H. Scott, F.R.S., President of the Linnean Society. A ceremonial key representing in coloured enamel on silver a flowering plant, designed by Mr. Paul Waterhouse, the architect of the new buildings, was presented to Dr. Scott. The new block is built in continuity with the north-west wing of the main building, and faces southward into the back quadrangle. It is a square block, 40ft. by 40, consisting of four main floors with two mezzanines.

Southwark Cathedral Improvements.

At a meeting of the General Committee of the Southwark Cathedral Maintenance and Endowment Fund, held at Bishop's House, Kennington, last week, the Bishop of Southwark presiding, Mr. C. Oldrid Scott, one of the architects superintending the work of restoration and repairs at the Cathedral, reported that the works in hand were nearing completion, and it was expected that the new approach to the Cathedral from London Bridge would be completed and ready for opening soon after Christmas. It was resolved that upon the completion of the new approach arrangements should be made for a public opening. It appeared from the financial report that a sum of over £12,000 had been raised since the issue of the first appeal in June, 1910, and that a further sum £33,000 would be required, £30,000 complete the minimum sum required f the maintenance of the Cathedral, and th balance for repairs now in hand, but n yet paid for.

A New Mission Church at Hempstead.

A new mission church at Hempstead near Rochester, which it is hoped will b completed early in December, will hav seating accommodation for 150, and wi be of simple design, built of brick in th Romanesque style, and finished wit rough-cast externally and plaster inside The roof will be constructed of oake timber, covered with red Eternit slating and it is proposed to erect a bell turre over the entrance at the west end. Ther are a small vestry and an organ chambe and provision will also be made for th choir. The building will cost about £40 Mr. H. H. Dunstall, A.R.I.B.A., F.S.I. of Chatham, is the architect.

Pavilion for Penzance.

The foundation stone has just been lai of a new pavilion in the Alexandr Grounds, adjoining the Western Promenade, Penzance. It has been designed i the English Renaissance style by Messrs Cowell and Drewitt, Licentiates of th R.I.B.A., of Penzance and Newquay Facing the sea will be a winter garden 73ft. by 30ft. At the rear of the winte garden, and communicating with it by sliding partition, will be a concert hall 50ft. by 45ft., with a sloping floor, an also a spacious and well-fitted stage. O special occasions, when the concert hal and winter garden may be thrown int one, an audience of about 1,000 could b accommodated. Adjoining the concer hall, provision has been made for an up-to-date café, and ample cloak-room space while at the back will be a caretaker' quarters, greenroom, and dressing-room for artists. The construction material are grey Cornish granite, and facing ston from the Castle-an-Dinas quarries

TRADE AND CRAFT.

Modernia Glass Tiles.

In producing the Modernia glass tiles the manufacturers (the Modernia Glas Tile Co., 68-70, Finsbury Pavement, E.C. have endeavoured to avoid a commonplace glassy surface, and uniform colour and they have succeeded in obtaining texture which, in conjunction with variations in shade, renders the tiles artisticall decorative. It is important to note tha there is no glazed surface to crack, th tile being homogeneous in material, an the colour going right through, so that, i the event of an accidental or a maliciou blow causing a chip in a tile, the expose surface would not stare out in another tint but would be hardly observable. Th tiles have a smooth, hard surface, are acid resisting, stand heat and cold well, and ar impervious to dampness. They are therefore suitable for outdoor as well as fo interior use, and should be particularl serviceable for sanatoria, hospitals, baths offices, laboratories, restaurants, factories etc. They are about ¼ in. thick, and hav a patent natural backing which forms guaranteed undetachable key. Th material is easily cut to any size, and ca therefore be readily adapted to the execution of original designs, and can be had of any size and in a large variety o colours. It follows that it can be modified for very effective use as pure mosaic. It is easily cleaned with soap and water.

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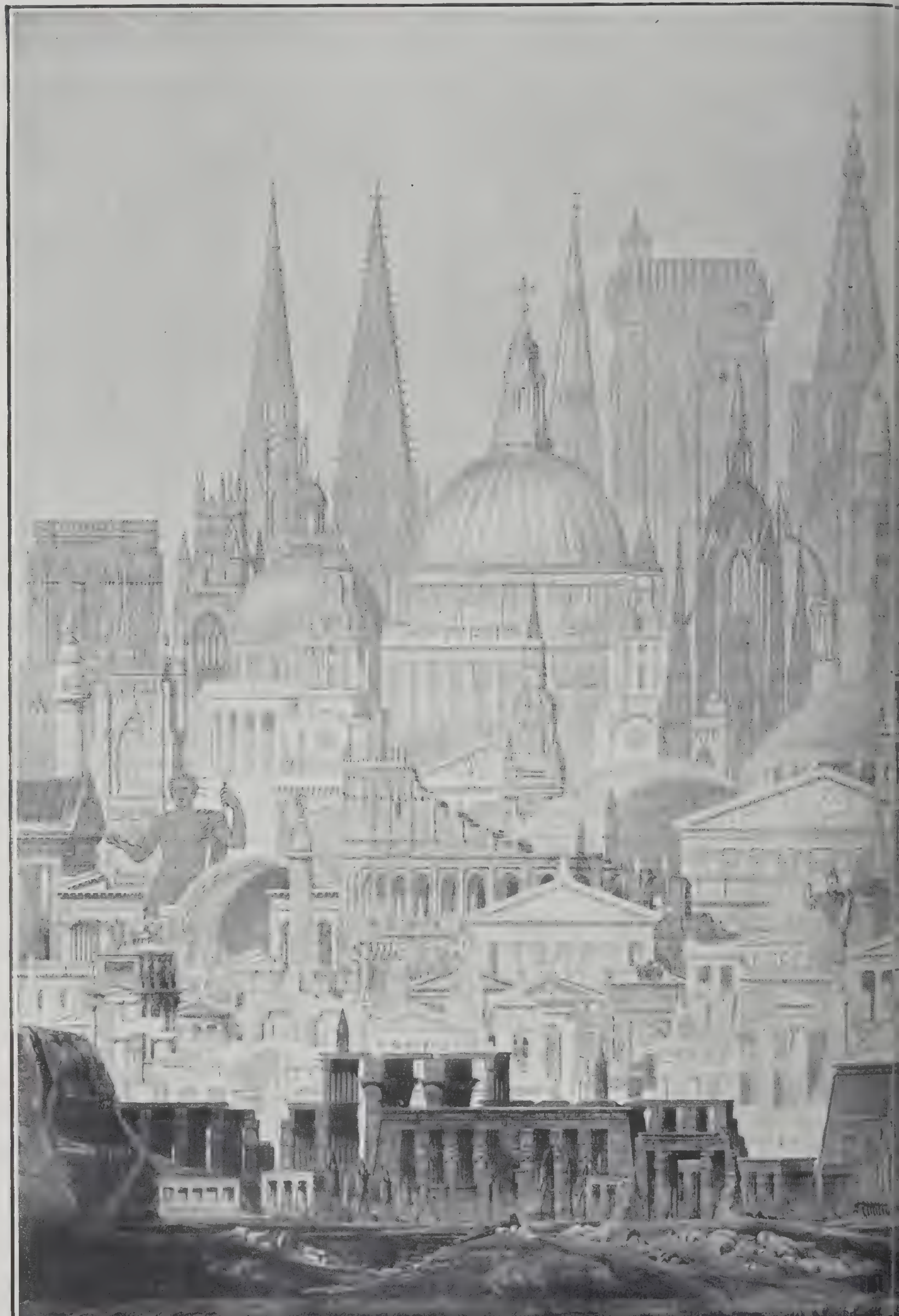
Supplement to The Architects' and Builders' Journal, *Wednesday, November 29th,* 1911.



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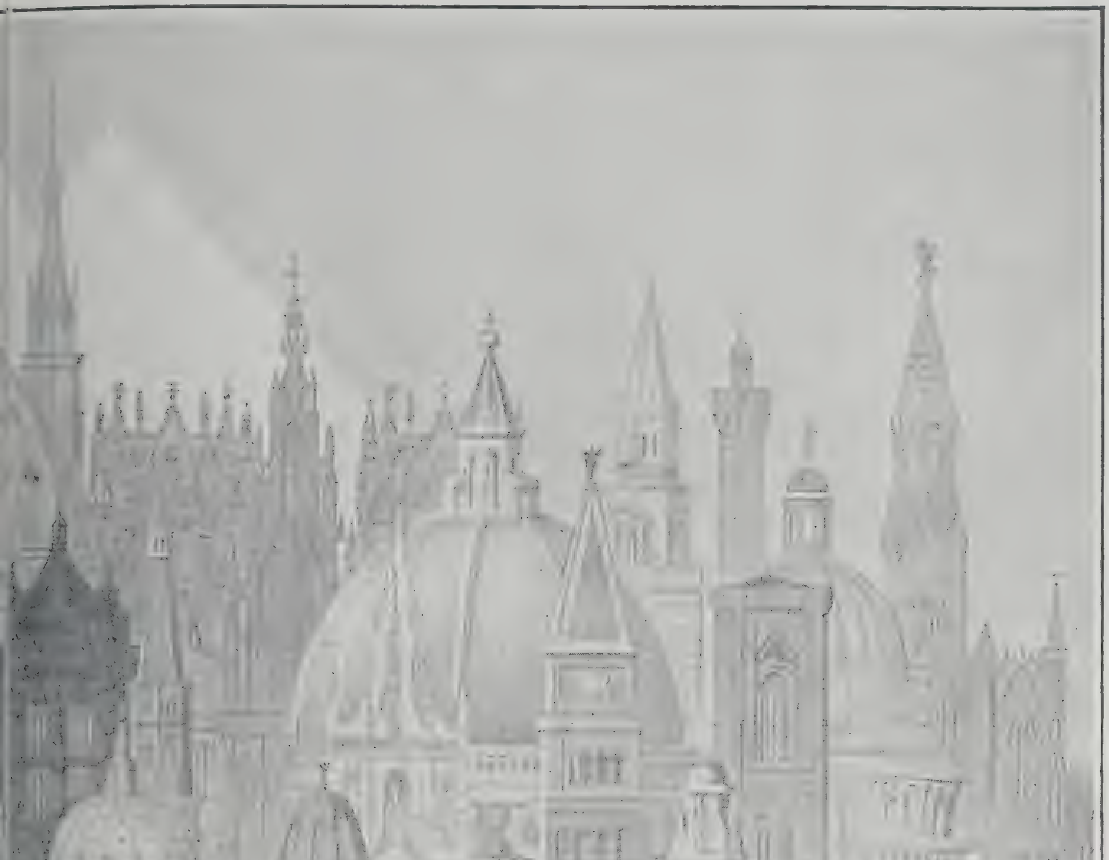

IE WORLD.

R. Cockerell.)

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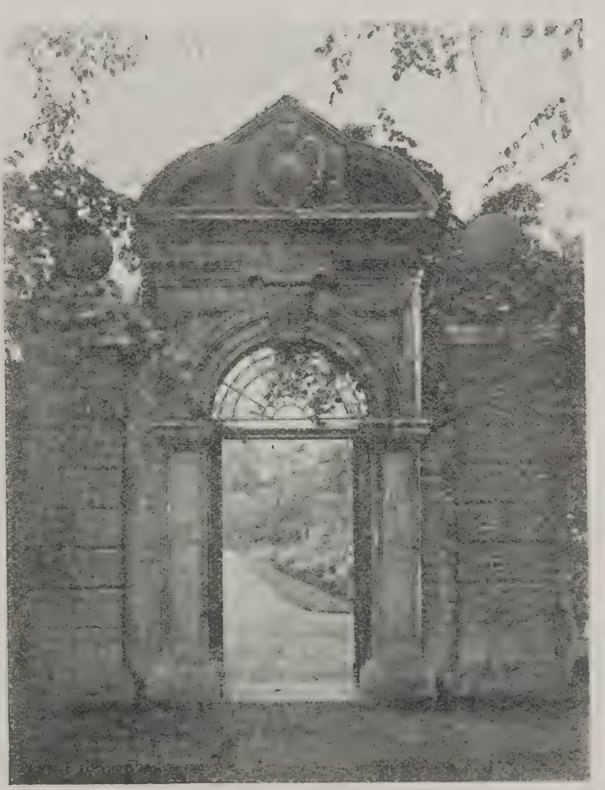
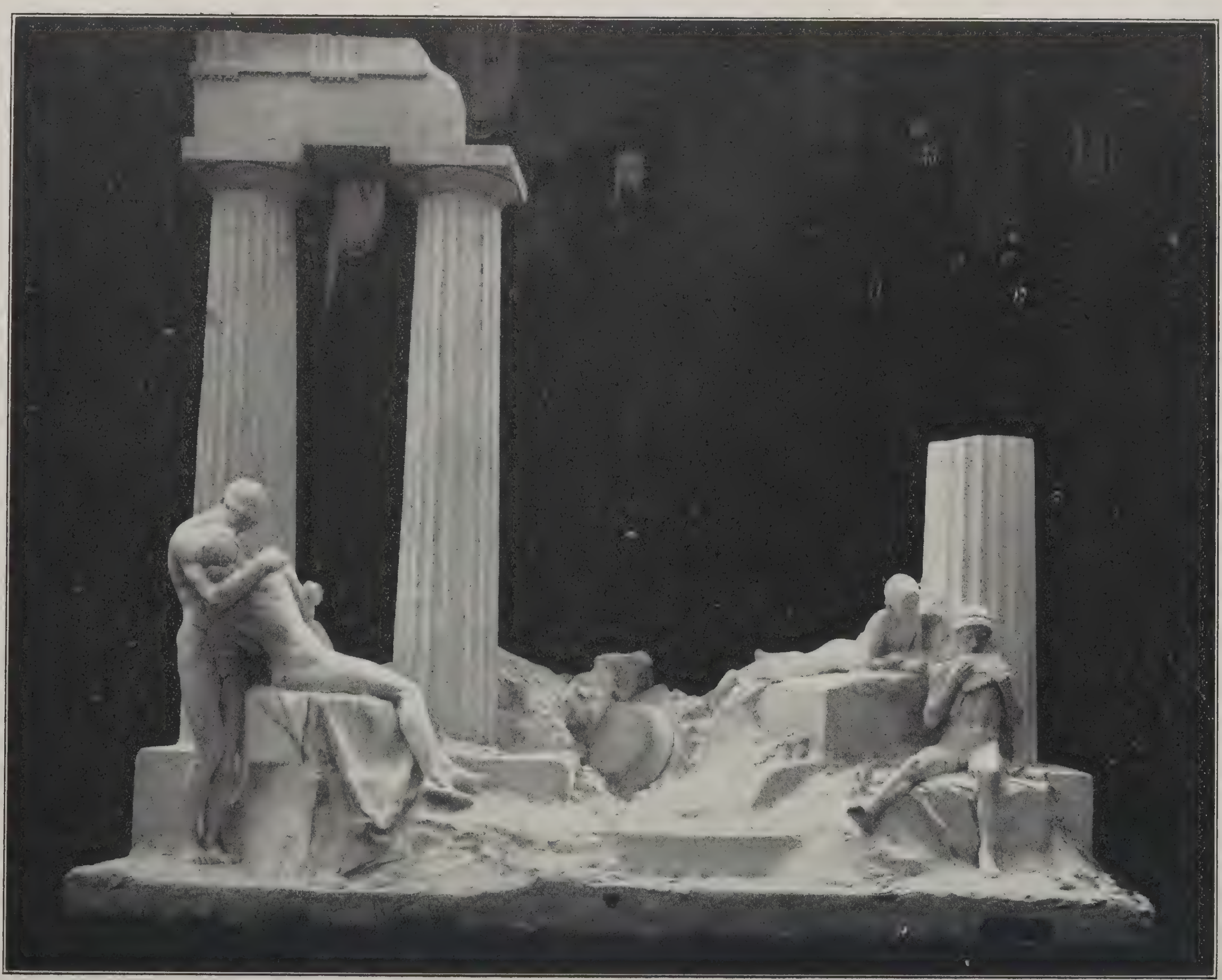
THE ARCHITECTS' & BUILDERS' JOURNAL.

WEDNESDAY,
NOVEMBER 29th, 1911.

Volume XXXIV. No. 879.



GATEWAY TO THE MASTER'S GARDEN, PEMBROKE COLLEGE, CAMBRIDGE.



VISION ANTIQUE. BY M. TERROIR.

Exhibited at this year's Salon.

THE ARCHITECTS' & BUILDERS' JOURNAL.

NOVEMBER 29th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 879.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

The New Departure in Art Study.

THE announcement, at the annual meeting of the British School at Rome last week, of the definite scheme for the establishment of an English centre of art study at Rome, somewhat analogous to the institution at the Villa Medici for French art-students, may turn out to be an important new departure in regard to English hitecture, subject to some contingent possibilities which ve to be taken into account. It is, in any case, a fact of ne interest that England should be now, so late in the day, ning into line with France, and setting on foot a scheme r study at Rome such as France established two centuries o.

The parallel in circumstances is not exact, however, for the lla Medici institution was founded and is kept up at the pense of the French Government, and it would be long, leed, before the Government of this country would vote y public funds for such a purpose. It appears that the ternational Exhibition of 1851, which was not in itself a ry great triumph for English art (what it was possible to mire then may still be seen in the wretched glass fountain the Crystal Palace, which formed the central attraction of 1851 Exhibition), has nevertheless left behind it a power benefiting art, in the shape of funds which have lain rmant for some time in the hands of a vaguely recognised dy called "the Commissioners of the 1851 Exhibition." ese Commissioners, who have shown a commendable faculty moving with the times, resolved at the commencement of present year to appropriate their funds to the formation travelling studentships in Architecture, Sculpture, and corative Painting, somewhat on the lines of those of the ench Prix de Rome, and were advised (we know not why by whom) to make these scholarships tenable at Rome. We y surmise that the fact that the scholarships were in imitan of the Prix de Rome naturally suggested Rome as the tre of study, to fall into line all the more with the French stem; and if any single city were to be selected as the tral home for studies that are to include all the arts, it difficult to see any possible substitute for Rome. Athens s the centre of a nobler and purer art; but her architectural numents are restricted in number and scale; she is not tral in regard to the question of excursions to other sites study; and the greatest works of Greek art are (fortunately unfortunately) not at Athens, but in London. As far as hitecture is concerned, the advantages of a period of resince in Rome consists in this, that it places the student in midst of the remains of architectural monuments which, ugh not in the best style in detail, present great conceptions plan, and accustom the mind to the contemplation of monuntal ideas in architecture. And perhaps the benefit to the dent lies still more in the general effect on the mind of ing amid the remains of a great epoch and in a place llowed by great historic associations. There is no littleness connexion with Rome; everything is large and grand, and a nd saturated with these influences would be the less likely to content with littleness in its own architectural conceptions. The same general influence would make itself felt, no doubt, in the sphere of the sculptor and painter, and for the painter there are the Stanze of Raphael and the Sistine Chapel of Michelangelo. To the sculptor the advantages are perhaps less obvious; there are great collections, but little that represents the highest type of sculpture. Roman sculpture may have been under-rated, as there is a disposition to think now; but at its best it is neither equal to Greek nor to the best Renaissance sculpture, the home of which latter is rather at Florence than at Rome. On the whole, one may conclude that, among the three classes of artists mentioned, the architect student in Rome has the best of it, and is likely to be more strongly influenced by the *genius loci* than either sculptor or painter. And as a centre for further study of classical and Renaissance architecture on other sites in Italy, Rome is as well placed as any city could be.

With all this promise, however, of travelling scholarships in art, and the location of their owners in Rome, there would have appeared to be no English Villa Medici forthcoming, but for the opportune existence of the English pavilion at the Rome exhibition, which the 1851 Commissioners offered to purchase and adapt for the use of the British School at Rome, if the Italian Government would hand over the site to them, which the Italian Government were quite willing to do; and even the necessity for purchasing the building was done away with by the liberality of the contractors, to whom it or its materials should have reverted after the close of the exhibition, but who generously waived their rights. So that here is the home formed for the new School, subject to necessary alterations; though it is hardly a Villa Medici except in the spiritual sense. The praises which have been lavished upon its eminent architect for building a reproduction of the upper part of the façade of St. Paul's we cannot concur in; on the contrary, it seems to us a singularly unhappy idea; what was meant for an upper storey does not look well as a ground storey, and we are quite sure Mr. Lutyens could have produced something much better, if he had trusted to his own inspiration instead of tearing, as one may say, half a leaf out of Wren.

Of course, this new departure entirely alters the character of what has been hitherto known as the British School at Rome. So far this has been, like the British School at Athens, purely an institution for archæological investigation. The old title, it appears, is to be retained, the present British School is to be transported to the new building, but its function will be entirely altered; it is to be an art school, not an archæological one; and the distinction does not seem to be exactly appreciated by the promoters of the scheme. It may seem very natural to them that Dr. Ashby, the present Director of the British School at Rome as hitherto existing, should be the first Director of the new School, and no doubt, if the existing School is to be disestablished, some place must be found for its Director, who is a very able and learned Roman archæologist. But archæology is not art, and it is illogical to place an archæologist pure and simple at the head of what, if it is to succeed, is to be a great art school. The promoters of the new School profess to be following the example of the French; if they enquire they will find that the Director of the Villa Medici is always an eminent artist—

architect, painter or sculptor; the situation is considered to be an important artistic appointment, only conferred upon an artist of high standing.

Granting, then, that we have an eminent artist at the head of our English Villa Medici, what results are we to expect from it in its bearing upon English architecture? One good result we may at once assume; the offering of valuable annual scholarships in architecture, sculpture, and painting, cannot but have a good effect in stimulating and encouraging those arts. But as to its probable influence on our modern architecture, there may be two opinions; at all events, there are reservations to be made. Professor Blomfield, in a letter addressed to the "Times" on the subject, expressed the opinion that the architectural prize-holder in Rome "would learn to study the higher aspects of architecture as the art of fine planning and composition in building"; there we quite agree, and we agree also that "the language of architecture as expressed in the monuments of Rome, Sicily, and Greece will become something far more real and vital than anything he can learn from pattern-books and manuals." What may be open to question is the idea that the students of the School at Rome will be able "to establish a certain standard of excellence in design," and "may in this way help to build up again that tradition of fine design which the French have never quite lost, and which has been utterly wanting in English architecture of the last 60 or 70 years." The judgment seems a little too sweeping; for there have been isolated buildings, during the period referred to, of very noble and quite traditional style; some of them even rather recently. But one can recognise what is intended, as fairly true in the main from the writer's point of view. Professor Blomfield thinks there has been too much of individualism in English architecture; he wishes to have a traditional standard kept up. There is certainly a good deal of eccentricity in architectural design at the present day, and we quite agree that a sober and well-considered tradition is preferable to eccentricity.

But when we turn to modern French architecture to see the effect of the Prix de Rome and Villa Medici standard, which is undoubtedly evident enough, the question is suggested, whether too much tradition may not be somewhat deadening in its effects. In France itself there has been a good deal of criticism of Ecole des Beaux-Arts methods and their results. They have been stigmatised as reducing architecture to a kind of Academical monotony. This is very obvious every year in the exhibits of students' designs which find place in the architectural gallery at the Salon. All these have a dignity of traditional academic style, which one regards with respect; but it is also true that they have such a strong family resemblance that it is somewhat difficult, in a description, to discriminate one from another. And it is a reasonable question, whether such a reduction of architectural design to a kind of approved programme is entirely for the good of architecture. It undoubtedly prevents students' designs from falling below a certain standard, but it also prevents them from rising above it. There is a want of freedom about it. Under the Ecole des Beaux-Arts system such a building as the Natural History Museum, one may suppose, could never have been produced; it is contrary to all the canons. But (without liking all the details) it is distinctly an original and interesting building; it has won the admiration of French architects too, in spite of its untraditional style; it has the rather uncommon merit, in these days, of being a successful building which is entirely unlike any previous model. On the whole, with all respect to the importance of traditional dignity of style in architecture, we should hardly like to see English architecture become as academical as French is at present. And we should be disposed to hope that the effect of an English Prix de Rome in architecture would be to raise and promote the sense of dignity and restraint in architectural design, in a broad sense—to develop the habit of treating plan and composition in a broad and grand manner—but not to foster an adherence to an academical style which all buildings seem very much alike. It is hardly th way to make architecture a living art.

There is a practical question in regard to the Roman A School scheme which does not seem to have occurred to anyo so far. What are the men who win our Roman scholarshi to get, in the end, by the devotion of three years to foreig study? We know very well what devoted labour the be French students at Rome give to the production of monument sets of drawings and restorations of antique buildings; drav ings such as are never seen in England. One would be ver glad to see equally splendid work produced by Englis students; and the analysis of ancient remains and the workir out of a restoration of them is perhaps a very effectual way gaining a full understanding of their problems. But th French student who does this gains something more than th education of his own mind. The Prix de Rome student wh has sent home a brilliant *envoi* returns to France with th *certainty* of a good commission from the Government of h country on the first opportunity; the man who has done we is never forgotten nor overlooked. Could the English Roma prize-man look for the same reward? As things are at prese we know that he would look in vain, except by a hap chance; neither the Government nor the public in this count would trouble themselves about him. Before we can make a English School at Rome the same success as the Villa Medic we should have to alter all that, and to provide that th student who does brilliantly should have a prospect of su sequent employment. Otherwise the clever young man wh is invited to compete for the prize may reasonably ask "What am I to gain by three years' work at Rome?"

More Government Buildings.

A LARGE plot of land, nearly rectangular in form, a extending from Horse Guards' Avenue and Whiteh Gardens to the Victoria Embankment, has been acquir with a view to the erection of more Government building An optimistic yet cautious writer in the daily Press sees in th transaction "an opportunity of rounding off Whitehall a Westminster into a consistent whole," and thinks "there no doubt that the development of this area in recent yea together with its future and foreshadowed development, w ultimately place Whitehall and Westminster in competiti with any governmental street that Europe, America, or t Colonies can show." This seems almost like an echo Whistler's remark with regard to his art, that Nature w creeping up. We seem to be creeping up towards the standa set by our Colonies, and may hope to be, sooner or lat actually "in competition" with them!—that is to say, wort of being taken into account in a comparison. "The chief ne is," the writer proceeds, "that the houses still unabsorbed the Trafalgar Square end of Whitehall should be acquir and a uniform vista produced. Then, when the Shakespe National Memorial Theatre occupies the site of Spri Gardens, and when the Pall Mall arch sweeps round on to extended arm of public buildings fronting other public bui ings, the Government city from the terraces of the Houses Parliament practically to Charing Cross will be completed That word "practically" has been of late years much abus and we mistrust it in its present application; while the write references to "rounding off" and completeness do not au very favourably for the popular conception of the Gra Manner. We are not ungrateful for the fine new Governm buildings that adorn the district, and we are not unhope that the new structures will at least equal them in dignity design; but our gratification in these respects is grea damped by the consideration that by adopting a timid a tentative occasional and casual patchy and piecemeal proc of accretion we have missed a grand opportunity not eping up to foreign countries and the Colonies, but of setting m a noble example of town planning in the grand manner. r chief seat of government ought not to fall so very far rt of this distinction as unhappily it does. But clearly the ion has not yet arrived at a perception of the fitness of ing appropriate architectural expression to the grandeur of Empire.

Central Control of Main Roads.

HANTS COUNTY COUNCIL having decided in May last to take over the control of main roads hitherto vested in the various rural and urban councils, a nber of the council proposed that, in view of the strong osition of the district councils throughout the county, the olution should be rescinded. His contention was that loss efficiency would ensue under the new arrangements, as rict councils were in a better position to supervise the ds. The chairman of the main roads committee, however, tended that the balance of experience showed it to be preable for the council to take over the roads. Of fifty-nine nties, he said, forty-five repaired the whole of the main ds direct. Lord Montagu, in supporting the chairman, ntioned that the main road from Blackwater to Bourneuth passed through fourteen different districts of main ds, and it was quite clear that the road should be treated its entirety from one end to the other. He pointed out t the Road Board favours direct control. Finally the ion for rescission was lost, only nine votes being recorded its favour, while there were fifty-one against it. This is sfactory in the result, as far as it goes; but the debate is e instructive in suggestion than in detail. The mere fact t it occurred is a significant indication of the vitality of ctionary forces; for it was nothing less than an heroic mpt to set back the hands of the clock, and to revert to discredited system of divided control, for which it would n impossible to set up a cogent defence. The centralisation ch has been adopted by most of the counties, and to which mpshire has now assented, is, however, merely a step in right direction. Only national control will suffice for the nt construction and proper maintenance of, at all events, "main-travelled roads," and for the just apportionment the resultant charges. Whether the cost is to be, then, in e degree, greater or smaller is a matter of infinitely less portance than efficiency, seemliness, and an equitable disution of the burden of the cost.

The Cost of Local Government.

INTERESTING and suggestive figures as to the cost of local government were cited by Sir George Goldie, Chairman of the Finance Committee of the London nty Council, at the close of a debate by the Council, last k, on the committee's report dealing with the financial tions between the Council and the local authorities of don in the matter of loans. Sir John Benn had produced res to show that London pays more per head of the ulation than any provincial city for its municipal service. Bernard Holland thought that this result was in some sure due to the work being done partly by the County ncil and partly by the borough councils, but that the main se was the vastness and importance of London. For mple, the cost of acquiring a site or constructing a road was iously much heavier in London than in the provinces. Mr. A. Harris thereupon contended that the size of London ht to make the cost of government relatively smaller, prod there was greater simplification. We should have, he gested, evidently as an echo of the R.I.B.A. President's rence to the same subject, one chief engineer, one chief itect, and the like. Sir George Goldie then quoted istics showing that, all the world over, the cost of governt was relatively high where the population is below 50,000, that it goes down proportionately as population increases to ninety or a hundred thousand, at which it reaches its most economical point, after which it rapidly rises, and thenceforward it apparently goes up indefinitely, although Sir George did not commit himself to that expression. He simply said that "when they got to very large populations the cost was immensely increased." Is that because large communities are unwieldy and give rise to overlapping and conflicting authorities, with consequent wasteful expenditure and contradictory aims and ordinances? For, as recorded instances suggest, it is possible for a builder to be sued by one authority for his dutiful obedience to another; or for an authority to be summoned by one of its own officials for a breach of its own bylaws. Taken at their best, however, Sir George's figures appear to suggest, as a practical solution of the problem, a division of the population of London into communities of a hundred thousand or so, with a strong central authority having full power to enforce upon them the sweet uses of commonsense management of their own affairs, and to prevent antagonistic rivalry and suppress obstructive pugnacity. The system suggested, however, would by no means get rid of the standing grievance that was recalled by Mr. Harris of the unequal incidence of the rates. While, he reminded us, London as a whole is paying only 7s. 5d. in the pound, as against 8s. 3d. in Manchester (which contradicts Sir John Benn's comparison), poor districts like Poplar have to pay 12s. But it should not be beyond human ingenuity to devise some clearing-house or pooling system that would satisfactorily solve this problem; which, it must be admitted, bristles with difficulties; otherwise the appropriate equations would have been formulated and applied years ago.

Balliol College Chapel.

IT is now stated—whether authoritatively or not does not appear—that the scheme for pulling down Balliol College Chapel and re-erecting it in the style of the building which was demolished in 1856 has been abandoned. In that case, the project need not be further discussed; it only remains to congratulate the authorities on the wisdom and courage shown in deferring to properly qualified opinion. The word "courage" is here introduced advisedly; for in such cases it certainly requires a considerable endowment of moral courage—not to say magnanimity—to be able to forsake a proclaimed intention in face of vigorous opposition. In the present case the retreat is both honourable and graceful; but it has been rendered comparatively easy by the unusually urbane character of the opposition. So far as we are aware, no element of bitterness has been imported into the controversy. Even senates and syndics and deans and doctors and proctors are human, although the undergraduate may not, unreservedly, think so; and a heated and misconceived phrase or so might unhappily have tended to harden their hearts and stiffen their necks; but the language held towards them in this matter having been uniformly courteous, they have apparently felt it not unbecoming to their dignity to surrender right early and with a good grace. Thus both sides have set an excellent example—of peaceful protest on the one part, and of courteous concession on the other, and the honours are equally divided. Balliol College is a strange blending of old and new. It disputes with Merton the honour of being the oldest foundation in the University, both dating from 1263 or 1264. The library at Balliol was built in 1430-80, and refitted by Wyatt in 1722. The adjoining chapel, whose existence has been threatened, was, as we have been so freely reminded, rebuilt from Mr. Butterfield's designs in 1856-7, and its east window, reredos of Derbyshire alabaster, and screen of iron and stone, have been much admired. Its windows preserve some stained glass of the fourteenth century, as well as the later designs of the Flemish Van Linge. There are also interesting fragments of old glass (1533) in the old dining hall, which was built about 1432. The new dining hall, which was opened in 1877, was designed by the late Mr. Waterhouse, who, in 1867-9, built the principal front of the college.

The Old Priests' House at Muchelney.

THE National Trust has succeeded in raising the £200 necessary for the purchase of the Old Priests' House at Muchelney, Somerset, and the sale of the building to the Trust has been sanctioned by the Archbishop of Canterbury and the ecclesiastical authorities. Muchelney, or Great Island, is near the more famous Athelney, where Alfred the Great took refuge. At Muchelney Alfred's grandson founded an abbey; near the abbey stood the parish church, and not far away was the Old Priests' House. Some authorities date the Old Priests' House—which, says a writer in the "Morning Post," has come down to us as an almost untouched relic of mediæval architecture—in the fourteenth century, but if of so early a date it must have been considerably altered during the next hundred years. Its ground plan followed the usual lines of a central hall, at first open to the roof, with smaller rooms at each end. The house is built of local blue lias, faced with yellow Ham Hill stone and roofed with thatch.

National Insurance Bill and Water Supply.

THE Water Areas and Statistics Committee of the newly organised Institution of Water Engineers report that the amendments urged by the Institution in regard to Clause 46 of the National Insurance Bill were laid before the Chancellor of the Exchequer, together with the many resolutions to similar effect received from water authorities. The clause in question was dealt with on November 9th, when amendments moved by the Chancellor of the Exchequer and passed practically met the following two points that had been urged by the Institution, namely—(1) That no liability shall be incurred under this clause unless it is proved that the defective or contaminated condition of the water supply which is the subject of inquiry under this Bill has arisen from the undue negligence of the water authority, and not from any accidental or unpreventable cause. (2) That any liability incurred under this clause should be specifically restricted to the authority proved to have been in default.

The effect of the clause in question is to trace responsibility for the sickness of insured persons, and to claim payment for any extra expenditure incurred through the default of the persons responsible for neglect of public health precautions; defective or contaminated water supply being specifically included.

Kitchenless Dwellings.

A HOUSE without a kitchen has been built in the Brent Garden Village at Finchley. The object is to minimise "domestic drudgery," and it is stated that provision is being made for tenants to take their meals at a central hall, where a staff of servants will do all that is necessary. The experiment will doubtless be watched with much interest, since its success would probably result in modification of house-planning. There can be no question that such a system of living offers many substantial advantages beyond the abolition of "domestic drudgery." In spite of the many facilities for acquiring the art, every housewife does not attain to George Augustus Sala's ideal of "the thorough good cook," and the national digestion, and consequently the national physique and efficiency, deteriorate to the extent to which she falls short of it in her concoction of the family meals. Her shortcomings in this respect were at one time recognised, and to some degree atoned for, in the practice of sending the Sunday dinner to the local bakehouse to be cooked; and in some parts of the Eastern Counties is still accustomed to make her own bread and send it to a "bake office" for treatment in an efficient oven. The hotel and boarding-house habit, implying community of meal-taking, is inveterate in American cities; and in Paris the industrial classes find it convenient for whole families to take their meals in cheap restaurants rather than in their tenement dwellings—where however, they often enjoy the advantage of a common kitchen well equipped and with a good cook at the head of affairs So far, however, the English, whose love of segregation i perhaps signalised by their decided preference for small self-contained dwellings, have not taken kindly to co-operativ living; and in many places the baths and wash-houses provided for the benefit of industrial communities have failed of their object, in spite of the superior facilities they offer Unless, therefore, unobserved by us, an unprecedented chang is obliterating the prejudices of the most conservative sectio of the most conservative people in the world, we cannot conceive that the kitchenless house and the *cuisine* in common are likely to become at all general, or even widely popular. The architects of small houses, therefore, are not likely to fee themselves at liberty to eliminate the kitchen; and as yet the maker of small ranges will see no great reason to quake in his shoes.

MODERN FRENCH SCULPTURE.*

BY H. HEATHCOTE STATHAM, F.R.I.B.A.

WHEN my friend Mr. Spielmann gave us his interesting illustrated paper, three or four years ago, on moden English sculpture, it occurred to me that it might ver well be followed, at a convenient season, by an illustrated paper on modern French sculpture. Perhaps this paper would have come more suitably, as it was first intended, at the clos of the session, since it is not a strictly architectural subject but I was asked to read it now to take the place of another the author of which could not be ready in time; and after all sculpture is the art most closely connected with architecture being, as I heard a sculptor once remark, "only a higher forn of masonry." But this was said at a meeting of architects.

The Rodin Craze.

That some notice and illustration of modern French sculpture is not uncalled-for is evident from that fact that, as general rule, I have found that the only name that anyon knows in England is that of Rodin. I went into a well-know art-photographer's to ask if they had any photographs o modern French sculpture, and was told—"Rodin? O ye we have a number"; and the same was the result at th London branch of a French art photographers; in each cas they had a whole portfolio of Rodin's works, and of all th other eminent sculptors of France only some half-dozen stra photographs; and why that was, of course the usual law o supply and demand explains. As to the origin and the reasonableness of what I call "the Rodin craze" I have nothing t say just now; in the meantime I would merely remark tha if people on this side of the Channel really believe that Frenc sculpture of to-day is summed up in the works of M. Rodi it is high time they were told differently. I believe I may clai to have seen every piece of French sculpture of importanc for nearly a quarter of a century back; at all events, I hav seen and made notes on the sculpture of every Paris Salo since 1889. And I wonder sometimes whether those wh profess to be interested in contemporary art, but who neve take the trouble to visit the Salon—whether they realise wha the annual sculpture exhibition at the Salon means. I means that for at least a quarter of a century back, first i the great central court of the old Palais de l'Industri (originally built for the 1878 Exhibition); then in the vas space covered by the roof of the Galérie des Machines; lastl in the great central court of the magnificent Palace of A built in 1900, there has been seen every year a collection o between eight and nine hundred new works in sculpture;

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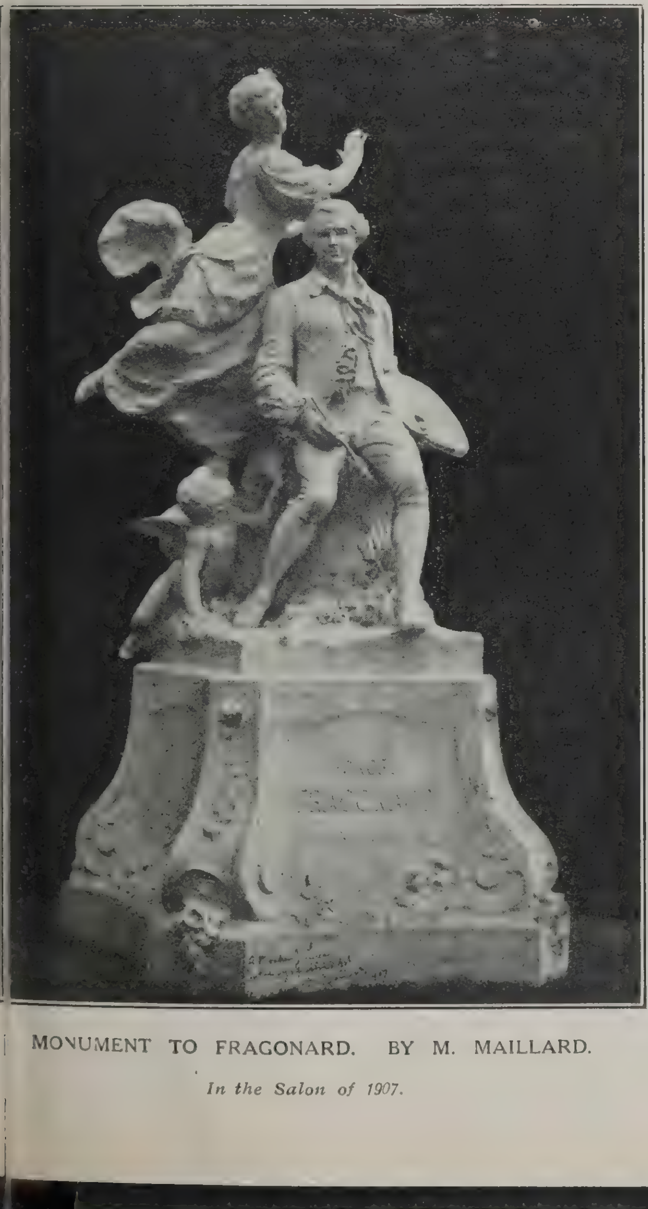
*Exordium to a lecture delivered before the Royal Institute of Briti Architects, November 20th.

†The Old Salon this year contained 868 works, the New Salon (in whi sculpture is less prominent) 334, making a total of 1,202 works produced f one year's exhibition only.

ne of them no doubt commonplace in conception, some of tm perhaps rather *outré* and violent in composition; but all, hink, up to a high standard of technical execution; and a nsiderable number of them, every year, representing both conception and execution the highest style of sculptural art. do not think the whole history of art can show such an raordinary evidence of artistic energy and vitality as is played in these successive annual exhibitions of French ulpture. I have in most years had the opportunity of re-ding my impressions in print on the Salon exhibitions in e or another English periodical (chiefly in the *Fortnightly view* or more lately in the *Nineteenth Century*); and as e cannot very well remember, twenty years afterwards, at one's impressions were at the time, I should like to quote ew words that I wrote in closing a review of the Salon of 190:—

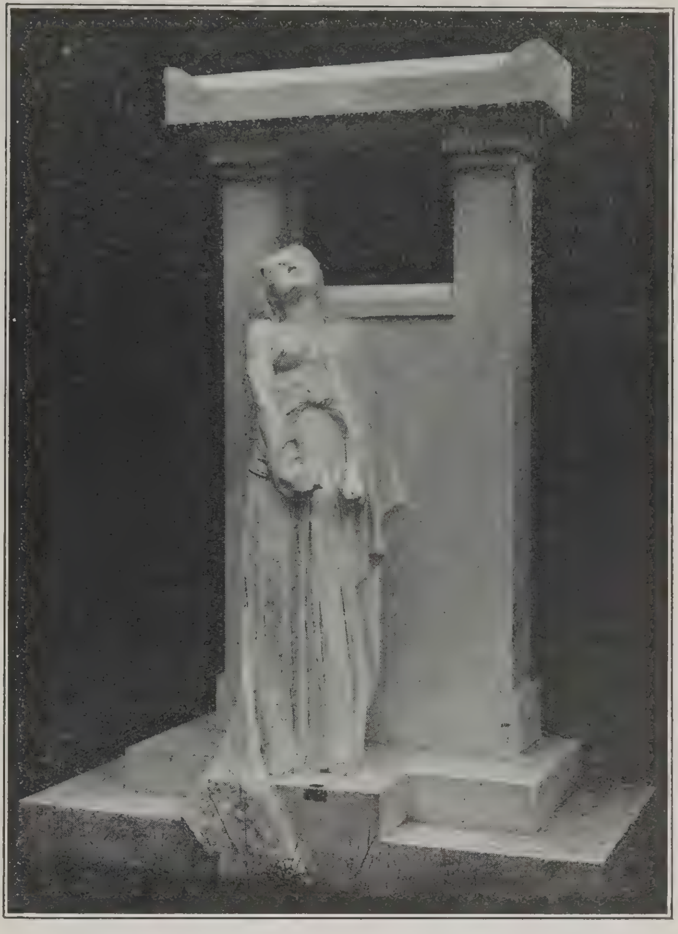
> "Taking this as a representation of French sculpture for e year, and comparing it with our little show at the Royal ademy, the contrast is extraordinary enough; and the evide e of mental vigour and power of invention as well as of ecution among French sculptors is equally extraordinary. . . In walking through the collection at the Palais de l'Indus-t we are confronted by new ideas, new treatments, and new ce and meaning imparted to old subjects; we are gaining v poetic conceptions of those subjects; and this not only in lated instances, but in the case of a large proportion of the rks exhibited."

f there has been a certain degree of decline in French lpture the last few years—and I am afraid there has—l I think the impression here recorded as to its intellectual erest would be true in the main up to the present moment. must be admitted, however, that 1890 was rather an ceptional year; that and 1904 are the two greatest years I remember in Salon sculpture. But I think I shall be able to show you enough illustrations to-night to justify the feeling expressed in my record of 1890.



MONUMENT TO FRAGONARD. BY M. MAILLARD.

In the Salon of 1907.



"DOULEUR." BY M. MAX BLONDAT.

In this year's Salon.

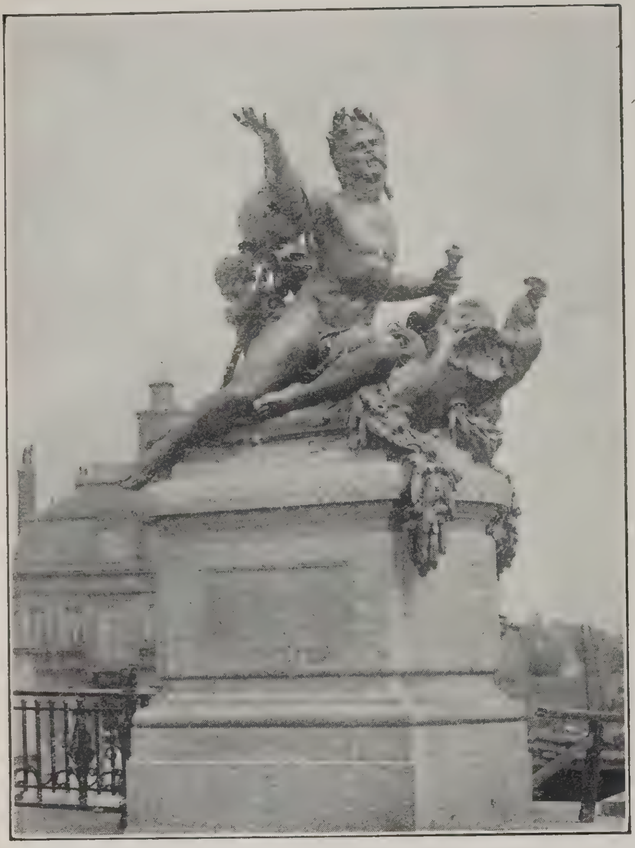
What to look for in Sculpture.

Now, what do we look for in sculpture? First and preeminently, perfectly modelled form, sculpture being the art dealing with form only, without the assistance of colour and perspective; for even relief sculpture is not so much perspective as the super-position of two or more planes of delineation. And hence the nude figure will always be the highest effort and ambition of the sculptor: first, because there alone it is that form has to be refined to the utmost. As Browning puts it in one of his poems, when he imagines someone exclaiming:

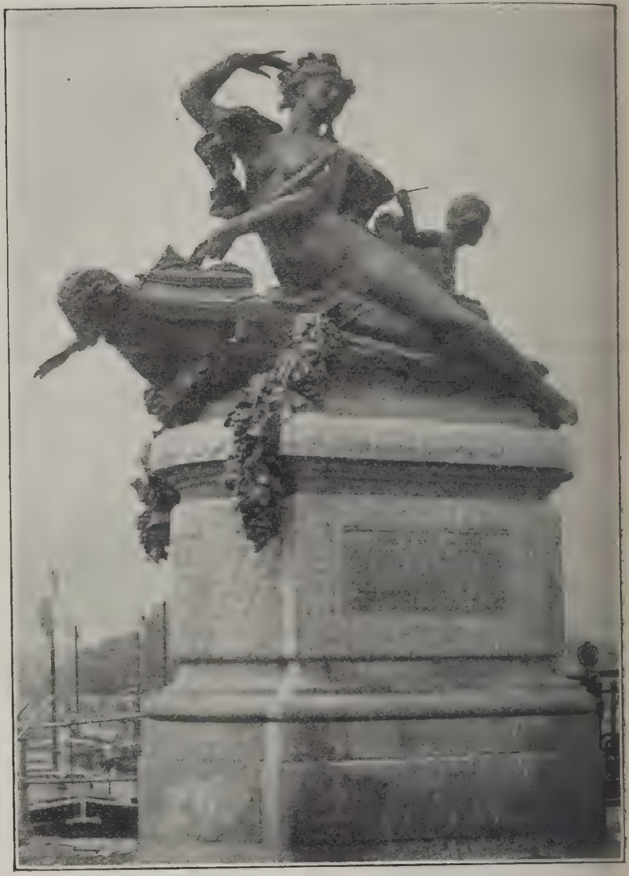
"'As like as a hand to another hand!'
Who said that, never took his stand,
Found and followed, like me, an hour
The beauty in this—how free, how fine,
To fear, almost, of the limit-line!"

And secondly, that the figure, delivered from the conventional bondage of costume, becomes an abstract thing, not tethered to time or place. And though mere beauty in a figure is in itself enough to justify sculpture, this abstract figure may also be made the means of symbolising an abstract idea, so that sculpture may in that sense become, what Matthew Arnold said poetry ought to be—"a criticism of Life." And it is for the frequent recurrence of this effort to symbolise thought that French sculpture of the modern period is, among other qualities, especially remarkable. And to furnish man with an adequate material for such abstract and symbolic form in sculpture, God created marble:—

—"as it were
Some clear primordial creature dug from depths
In the earth's heart, where itself breeds itself,
And whence all baser substance may be worked":



"L'Escaut."



"La Seine."

FIGURES ON THE BRIDGE AT SAINT-QUENTIN. BY M. C. THEUNISSEN.

so says the sculptor in "Pippa Passes." And when his bride glances up at the model of a figure of a mediæval German Kaiser in splendid array, he says:—

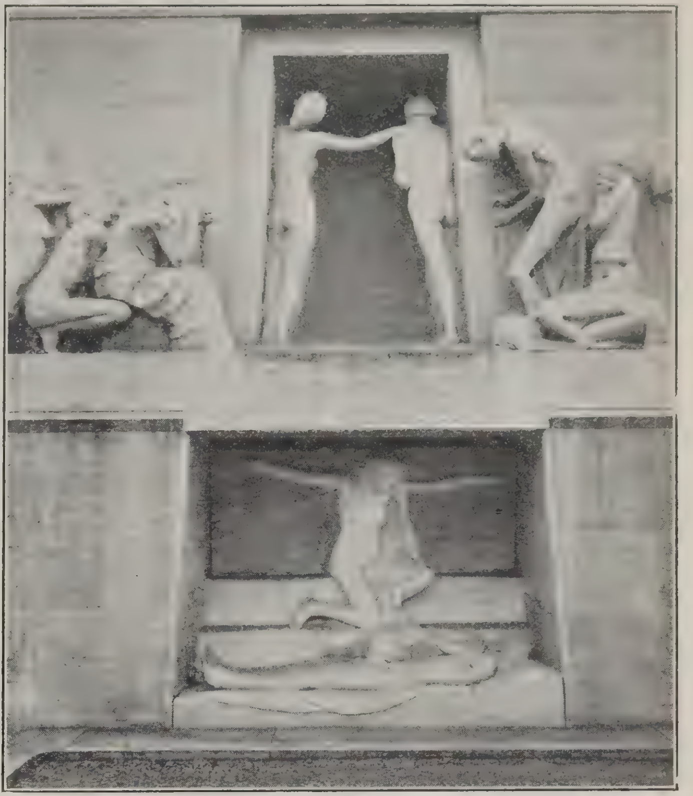
> "Ah! do not mind that; better that will look
> When cast in bronze:"

and he was quite right; marble is too ethereal a material to be prostituted to the carving of tailoring and millinery.

The expression of abstract idea through abstract form is then the highest mission of sculpture. Beyond that, what possibilities are there? The actual form and presence of memorable personages, in their habit as they lived, can be commemorated in bronze, though not suitably in marble; or, which is far better, the portrait head alone can be represented, in bronze or marble, accompanied by figures symbolical of the character and career of the person commemorated, which is the favourite way with the French; and here we come round again to the abstract ideal. Sculpture may represent, also, significant facts and forms from the life of its own day, especially those which are typical rather than merely incidental; though this is a function of sculpture to be used with caution and reserve, lest it should degenerate into mere realism and playing to the gallery. Of all these varied functions of the art of sculpture you will see examples in the illustrations I have to show you.

Following these introductory remarks, slides to the number of about 130, representing selected modern French sculptural work, were shown upon the screen. Mr. Statham described all the examples, giving in most cases the year in which they were exhibited, with some brief notice as to their authors. Mr. Statham said he would be dealing chiefly with sculpture of the last twenty-five years. He would first show "La Danse," by M. Carpeaux, exhibited at the Academy in 1874. This he considered to be a little too violent in movement for sculpture, but those who understood music would appreciate his comparison of it with the finale of Beethoven's Seventh Symphony; there was the same kind of clash and fury of movement in it. Of the eminent men who were no longer living, the greatest was Capu (whose Jeanne Darc among other works, was shown). Mr. Statham explained i passing that it was wrong to spell the name with an apostrophe before Arc. Translated into English it was just "Jan Dark."

Chief among the sculptors whose work was shown an described were the following:—M. Barrias: Monument t Victor Hugo, representing the novelist as an outlawed exil seated on top of a rock, surrounded by figures blowin trumpets; monument of the Defence of Paris, a back view o which rather pathetically showed a little child shelterin behind the guns. M. Paul Dubois: Jeanne Darc represente as a fine martial figure. M. Dalou: "Triumph of th Republic," a monument situated in the Place de la Nation i the extreme east end of Paris; also a monument showing Tim bringing fame to Delacroix. Gérôme, said Mr. Statham showing some of his works, was the last survivor of that grou of French artists who seemed more like soldiers than artist He possessed an absolutely correct technique without th slightest sentiment, and he never appealed to the feelings i any way. He excelled in polychromatic sculpture. H "Tanagra" and an equestrian statuette of "General Bonaparte" were shown. Among living French sculptors, sai Mr. Statham, M. Mercié was undoubtedly the first. He coul do everything, and did everything well. Ten of his work were shown, including "Louis Philippe and his Queen" (commission which Mr. Statham thought M. Mercié must hav accepted very reluctantly), and a monument to Alfred Musset, now in a corner of the Rue de Rivoli, and somewh out of place in its busy surroundings. His "Gloria Victis, a monument of the disastrous campaign with Germany, was remarkable conception in honour of the vanquished, standin in a small courtyard of the Hôtel de Ville. M. Gustav Michel: "Dans le Rêve," "La Pensée," and, among his mo serious works, one showing a blind man carrying a paralyt man upon his shoulders, and "Au Soir de la Vie," the statu of an aged man. M. Bartholomé's "Monument Aux Morts, ı the Cemetery of Père Lachaise, Paris, was then shown. ·Ir. Statham pointed out how of the two figures actually ntering the tomb the female figure, with her hand resting ncouragingly upon the shoulder of the male figure, was represented as the stronger nature of the two. He had looked in ain for any other work by M. Bartholomé to equal this. The ollowing works of Rodin were shown: "Balzac," "Jean aptiste," "L'Age d'Airain," "Le Penseur," "Le Baiser," La Pensée," and "Victor Hugo." Dealing with Rodin, Ir. Statham recalled how many of the works by this sculptor hich had now become famous were exhibited before the Rodin Craze," and passed unnoticed. The "Jean Baptiste," hich had been recently purchased for England, was exhibited ı London nearly 30 years ago; why did people not then comission this work? He replied, because no Rodin craze had en been set up. It was not one of the best of Rodin's orks by any means. The finest thing M. Rodin had done as his "Victor Hugo," which he (the lecturer) certainly referred to Barrias' large monument with the trumpet-blowıg figures. A number of other works were then illustrated, y Hector Lemaine, Charpentier, Cordier, Sicurd, Mdme. anny Mare, and many others. Some of the works of M. londat showed how sculpture could be used in a humorous nd playful sense; and those of M. Hippolyte Lefebvre howed the endeavour to use sculpture in the realistic presentaion of figures of modern life; not, he thought, the right use f sculpture, but so cleverly done by this sculptor that one ould not but be interested in it. Among the remainder of the lustrations were two groups to which he attached special nportance. One was a series of memorial sculptures, monuıents to eminent people, showing how the French escaped the ifficulty of giving a full-length figure in modern costume; iving the portrait bust only, accompanied by some figure lustrative of the genius of the person commemorated. Thus ıey had Larche's bust of Corot, accompanied by a woodland nymph; Lombard's bust of Watteau, crowned with a garland by one of the eighteenth-century ladies out of his own pictures; Frémiet's monument to Raffet, the lithographic artist who illustrated Napoleon's campaigns, consisting of a portrait bust accompanied by a bronze figure of a drummer beating the charge. A large monument to a certain M. Macé, by Massoule (probably a local sculptor), was an example of how a monument could be made to tell its story; there was no inscription, but everyone could see that Macé had done something for primary education; there was the symbolical draped figure holding up the open book, and the two children at the base hurrying off to school. In England we should have put up a full-length figure of the benefactor, with his boots and his trousers and his coat all carefully reproduced, and an inscription on the pedestal to say what he did. Was not the French method more interesting?



CENTRE PORTION OF THE "MONUMENT AUX MORTS," IN THE PÈRE LACHAISE CEMETERY. BY M. A. BARTHOLOMÉ.

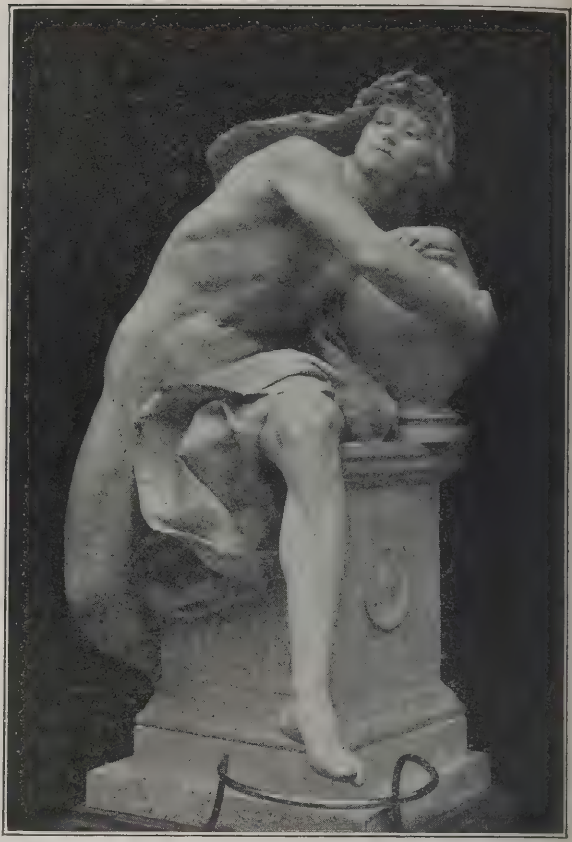
ÉRAUT D'ARMES": LAMP STANDARD ON MAIN STAIRCASE IN THE HÔTEL-DE-VILLE, PARIS. BY M. FREMIET.

The concluding groups of illustrations consisted of examples of the use of sculpture to symbolise intellectual ideas; among them Cordier's remarkable and almost sinister group "Le Doûte"; Michel's "Form disengaging itself from matter"; Carli's symbolic group, "Spirit and Matter" (from this year's Salon); Champeil's beautiful figure of "The Exiled Muse"; Michel's figure of the Astronomer, illustrating a sentence from Pascal—"Le silence éternel des espaces infinis m'effraie"; and finally, Jean-Boucher's group "Antique et Moderne," of all modern sculpture the lecturer's favourite work, for its combination of sculptural effect with intellectual suggestiveness.

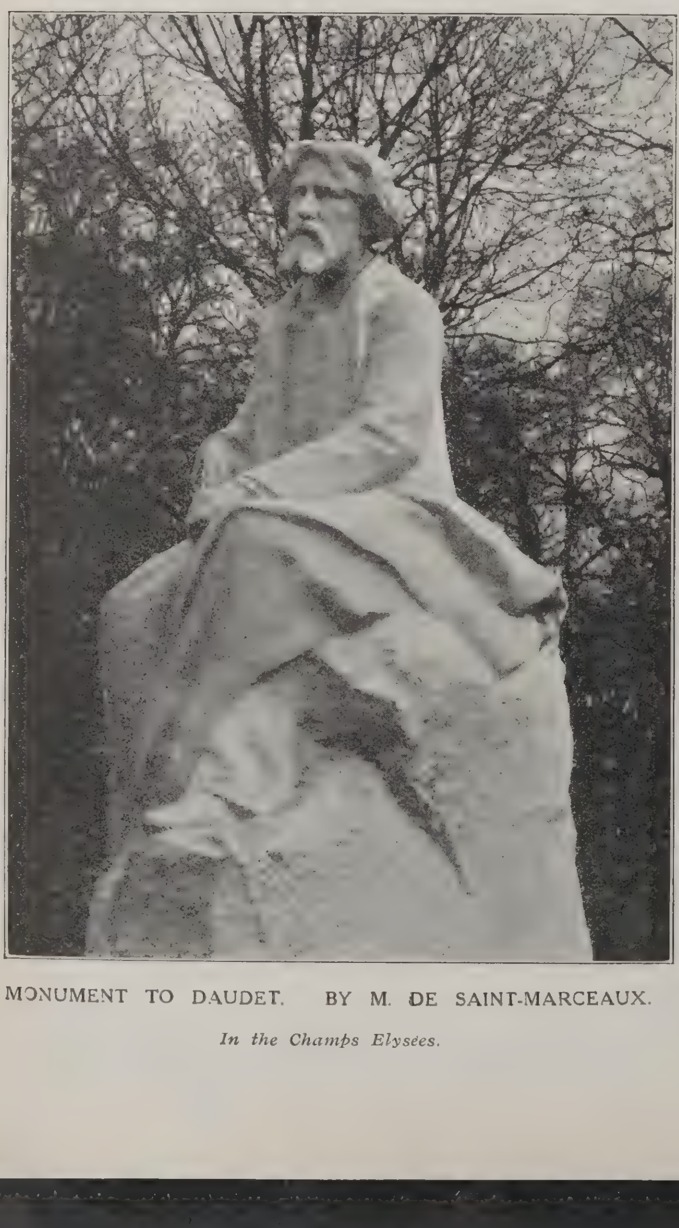
In conclusion, Mr. Statham said he had shown them what they would admit to be a series of rather fine things; and it should be remembered that these were merely a few examples picked out from scores of equally fine modern works of the last twenty years of French sculpture. What, he continued, were the reasons for the production in modern France of such a wealth of sculpture? First, the French had a place where sculpture could be properly exhibited—an immense uncrowded area, with finest possible lighting—and, second, they had a Government which encouraged sculpture by purchasing works and by making awards. The visitor to the Salon would find that, very shortly after the opening of each exhibition, fifteen, twenty, and even thirty important works had been purchased by the State. It was difficult to imagine our Government doing that. He (Mr. Statham) had personally seen Mr. Harcourt, when First Commissioner of Works, with a view to the purchase, for Dartmouth Naval College, of Mr. Reynolds-Stevens's group of Philip and Elizabeth playing chess with battleships. Mr. Harcourt was most sympathetic, but could only reply that there was no money for such a purpose. If English sculpture was to have the same chance of development as French, they must recognise that the art was worth support by the nation, and not be told that this wealthy Government had "no money for such purposes."

DISCUSSION.

Sir W. Goscombe John, proposing a vote of thanks, said Mr. Statham had given them such a tremendous lot to think about that it would only be possible to touch upon a few of the many most interesting questions he had raised. They had seen a wealth of modern French sculpture, and it was easy to realise what a huge intellectual effort it represented. Many of the things shown were epoch-making; and it was this work which had been produced during the last twenty-five years that had moved every sculptor in Europe to make great efforts. French sculpture, he thought, was the third great school; the mantle of the Greeks fell on the Italians, and from the Italians to the French, and there had never been a period when France was without her great sculptors. The French cathedrals—Chartres, Rheims, and others—testified to this fact. Moreover, they had never been tied up with paralysing conventions. The mere mention of the name of Rodin, he continued, was a battle cry—almost a challenge—but he thought they all would agree that Rodin was really an epoch-making sculptor, quite apart from whatever they considered to be the merit of his works. No sculptor since the days of the Greeks had created so much interest in the art, and no sculptor had succeeded to such an extent in making people talk. He (the speaker) was sorry that he had to disagree with Mr. Statham, but he knew of nothing more remarkable than Rodin's St. John—nothing more dynamic in its force—and he was glad that there was a copy in South Kensington, to which he himself had modestly subscribed. Of course, the public knew only of Rodin because he made good "copy" for the newspapers, and it should be remembered that he did not necessarily represent French sculpture. Some of the sculpture which they had seen, he continued, seemed to be "voices," while much of it seemed to be "echoes"—certainly very beautiful echoes—but only echoes of something much finer. He had been greatly impressed with the importance of the nude; the predominance of which seemed to prove that the sculptor was compelled to go to the nude for abstract expression. In England, sculptors were in a rather pathetic position. They were all full of enthusiasm and anxious to do worthy monuments, but they were invariably hindered by committees. In the work of St. Gaudens, one of the greatest of American sculptors, they would not find a single nude figure. This was not because he disliked the nude, but because American opinion, like the English, would not have it, and demanded instead the complete attire, including the watch-chain, the boot, and the button. The French style of monument—a bust with symbolical figures—was charming, and almost every English sculptor could say that he had tried to get this form adopted, but had failed. In France they had the State, the Municipality, and various committees throughout the country all interested in sculpture. That, undoubtedly, was why the Salon was always filled with such vital, living work. The only thing in England which helped to keep ideal sculpture alive was the Chantery Bequest. Before we could make any real advance we must have more sympathetic committees and a large gallery for the proper exhibition of sculpture. In conclusion, the speaker said that no one more than Mr. Statham had been the means of bringing about an appreciation of French sculpture during the last twenty-five years.



GENIUS GUARDING THE SECRET OF THE TOMB.
BY M. DE SAINT-MARCEAUX.



MONUMENT TO DAUDET. BY M. DE SAINT-MARCEAUX.
In the Champs Elysées.

Mr. W. L. Colton, seconding the vote of thanks, said that e lecture had been a sort of oasis in the desert; it was seldom at in London they had the opportunity of listening to such lecture. Mr. Statham had said that one of the first qualis of sculpture should be its perfect form. That was very e, but to-day scant attention seemed to be paid to it. Greek ulpture, however far from the eye, was always perfectly odelled. Indeed, it was said of the Elgin Marbles that ey were never properly seen until they were brought level th the eye in the British Museum. To-day it was thought fficient to leave merely a rough-hewn block. He had per-nally the greatest admiration for French sculpture, but in ere justice he had to say that there was a good deal of fine nglish sculpture as well. At the Franco-British Exhibition must have been inspiring to see how very favourably English ulpture compared with French. For one thing, we could t be accused of those limitations which, in some French rk, so clearly showed the cloven hoof. The dancing group the Opéra, for instance, was overdone and much too vital. e remembered, too, a work of very absurd character, repre-nting a zinc bar in a Paris café, behind which stood a gross-oking landlord and shelves with rows of bottles. A drunken man was lying on the floor amid a mixture of carrots and her market produce that had fallen out of her basket. The ole thing showed to what lengths of absurdity some French ulptors would sometimes go. Rodin, continued Mr. Colton, d only of late years assumed the rough-stone, unfinished thod of sculpture, and only since he found that eccentricity d. Among his works which had attracted the copy-seeking rnalist were a figure of "Eve," made to appear as though lking in the sand, and a bust of a gentleman elevated upon igh pole, both having been at the Salon. He remembered ing Rodin knock off the arm of his Victor Hugo. He ply fixed it up again, put a little plaster round, and left The leg, too, was considered rather short, so Rodin extended it by sticking in a piece of piping and putting on a new foot! And this was fame! And yet beneath it all Rodin was undeniably a great sculptor. He also had a liking for exhibiting a figure in pieces—a leg here, an arm there, and perhaps a torso—and finally he would stick it all together and exhibit it as a whole.

In modern times they had undoubtedly done wonderful sculpture; but since Michelangelo they had suffered much from too many ideas, too many passions, and wanting to show too much. Concluding, the speaker again thanked Mr. Statham, whose kindly criticisms of his own work in the past he had greatly valued.

Mr. Leonard Stokes, in putting the vote of thanks, said that although he could not profess to be an expert, it seemed to him that the order of reform should be reversed. Instead of getting the place first, then the money, and then the public appreciation, it seemed to him that if they got the public appreciation first the rest would follow as a matter of course. Mr. Statham had mentioned an instance of a painter becoming a sculptor; he was surprised that there had been no case of an architect becoming a sculptor, since these two branches were more closely allied than the former. He thought it only right to include in the vote of thanks reference to the excellent collection of slides, without which they could not have followed the lecture with such absorbed interest.

Mr. Statham, in reply, said he was quite conscious that every year at the Salon there was a certain amount of vulgar, realistic sculpture, which he considered perfectly detestable; but this kind of work was only a small proportion of the whole. He had also a high opinion of English sculpture, the progress of which during the last twenty-five years had been wonderful. With regard to the slides, for quite two-thirds of them he was indebted to a number of French sculptors, without whose kindness in sending photographs of their work he could hardly have given this lecture.

DECORATIVE FOUNTAIN, "LES DANAÏDES." BY M. JEAN HUGUES.

In the Salon of 1903.

THOUGHTS ON JACOBEAN ARCHITECTURE.*

BY ARTHUR T. BOLTON, F.R.I.B.A.

A Complicated Subject.

Domestic architecture is essentially a complicated subject. Those who have looked into the history of a house extending over two or three centuries will agree that the customary absence of records, either of building or reconstruction operations, renders many common assumptions and historical deductions very unsafe. Broadly speaking, we shall find that each generation makes its own alterations, and that sales, with the accompaniment of new ownership, are pretty certain dates of successive upheavals.

We know that early architects had special riding allowances, and, as Mr. Blomfield puts it, "much of Inigo Jones's time must have been spent in the saddle." This must have been true of the Thorpes and those others who so far are only names to us.

Contemporary Drawings.

There is no sense in looking for our signed sets of contract drawings and details at that time of day. You will find the 280 pages of Thorpe's collection and the Inigo Jones Burlington-Devonshire set of drawings very illuminating as to the methods of these men; but these documents are not the whole story. Even now we know how far-reaching are the decisions on the ground and the bearing of actual set-out and *vivâ-voce* instructions to men with whom we have worked before. Critics to command our attention must view their problems with the eyes of an architect and with that intuitive perception of style that springs from familiarity with a man's work.

In dealing with Jacobean architecture, he proposed mainly to adhere to the reign of James I. and its sequel under Charles I., but in no case to cross the gulf of the Civil War. In view of this, he had with reluctance omitted to deal with the beautiful College of Clare at Cambridge. The Palladian work of Inigo Jones is also outside the subject.

A Fascinating Half-century.

Jacobean architecture for our purpose, therefore, is that from 1600 to 1649, just the first half of the fascinating seventeenth century. Apart, however, from that, he thought all would distinguish between Elizabethan and Jacobean work—that is, between the preceding half of the sixteenth and the following first half of the seventeenth centuries. Off-hand most architects would state a distinct preference for the former, and admit a belief that Jacobean work was a decadence from a more vigorous and interesting class of work.

The "Glass House."

To James is assigned the origin of the proverb that "those who live in glass houses should not throw stones," the circumstances being that Villiers, Duke of Buckingham, had erected for himself a building so windowed as to be known as "the glass house." Having fomented a disturbance, and the mob retaliating by breaking his windows, he complains to the King, who countered him with this characteristic utterance. We cannot acquit James of fostering the pedantry that was the curse of his age.

Policy and Architecture.

The shifting direction of Tudor, Elizabethan, and Jacobean foreign and social policy has its reflection in our architecture. Italy, France, the Spanish Netherlands, the liberated Netherlands, Spain itself, and more transiently Germany, each and all were shifting centres of influence. As the course of the Reformation and counter-Reformation fluctuated, so importations of divergent tendencies came and went. It was not only by the diffusion of ideas and of books and prints, but also by the actual immigrants, largely workers and workmen, that these forces were felt. All the while, however, England was finding herself not only politically, but also artistically, and, as a man grows, absorbing or rejecting those elements which the state of her growth dictated.

The English as a race being at once unaccommodating and assimilating, the alien artists were absorbed or pushed out. Once more we see William the Englishman taking the place of William of Sens, but it serves no purpose to doubt their existence or deny their influence. The fruit-grower is not concerned to deny that his trees have been grafted.

The Accession of James.

We will now turn to consider the architectural position at the accession of James I. (1603). The flood tide of Elizabethan house-building was slackening.

By the end of the sixteenth century a vast fund of experience had been accumulated. Able workmen abounded, and the need of the moment was for some directing mind to focus the confused and scattered elements into a lucid whole, formulating a line of action along which future progress could be assured. In Inigo Jones an architect appeared whose work was destined to bridge even the gulf of civil war and to determine the future course of English architecture.

The author thought that we ought not to regard the Elizabethan and Jacobean ages as unprovided with skilful architects. Quite a list of names of men, whose biographies we should be only too glad to have, has been collected. We may, however, deduce from the Thorpe collection of plans, drawings, and designs that in the Thorpes, father and son, we have a type of the high degree of zeal and intelligence that the age produced. The impression produced by a careful study of the Thorpe drawings is that in them we have the record of studies made and designs conceived in the true spirit of the working architect.

What we seem to want is that some representative body interested in architecture should undertake to facsimile for students and general use such collections of early drawings as those of the Thorpes and of Inigo Jones. With the best will in the world on the part of owners they must otherwise be largely inaccessible. This has been extensively done in Italy from the drawings of the great Italians, which are thus made available to all. It is beyond the resources of an individual architect.

Holland House.

Holland House, 1607, appears in Thorpe's collection in a form that shows that it was an alteration of a square house by the additions of wings, arcades, and other features, comprised by Thorpe in his note on his drawing as "perfected per me." Three centuries of occupation of a house so close to the capital have naturally left many scars of time. Built in the first place of brick and a soft stone much repointing, cement repairs to, an much cutting out of the stonework ha taken place. It must be looked at wit eyes familiar with Knole, Kirby, and Asto Hall to appreciate its original condition As at Hatfield, the façades have little relation to each other. The south front is th most successful; like a Jacobean epitaph it welds many and varied fancies into a expression of fair coherence. There ar sixteen gables, two towers, and a half octagonal central turret, in combinatio with bay windows and arcades that seen innumerable. In the sunshine of a winter' day, strengthened with far-reachin shadows, the composition in its gaiety an sparkle seems a fair Northern counterpart of the Villa Medici at Rome.

We know that in 1623 Inigo Jones ha orders to prepare two chapels, one at Denmark House and the other at St. James' for the Infanta's use, and then he went t Southampton to prepare for her receptio being made a burgess of that city on th occasion. From this and the fact of th unquestionable Inigo Jones character c the two well-known gateway piers his connection with this work has been assume

Jacobean London.

In forming an idea of London in th Jacobean age, it must be borne in min that brick building did not become gener till after the Fire of London. Lincoln' Inn Fields and Covent Garden Piazza we both novelties, and the great stone an brick houses along the Strand and Whitehall Palace itself were on the lines Hampton Court, Old St. James's, an Lambeth Palace—country houses in tow Sir Paul Pindar's house, the front of whi is familiar in the Victoria and Albe Museum, is therefore of exceptional i terest. The Museum authorities, doub less for good reasons, have dated it 16 instead of "about 1625," as formerly. S Paul Pindar is supposed to have been bo 1565 and died 1650. His house is of th greatest value, as one which was co sidered adequate for a millionaire at th epoch.

Hatfield.

Quenby, in Leicestershire, is a miniture Hatfield in this respect. Hatfiel 1607-11, while far more coherent th Burghley, suggests that the worthy supe intendent of the works had been suppli with a plan and only two elevations, a that in working out the other two as proceeded he dropped into the gable sty in which he had probably been brought u

The plan of Hatfield is of very gre merit. It seems to be a development Hardwick Hall; but while the latter is more coherent design, it is in respect Hatfield as a summer villa or casino co pared to a house. Unfortunately, the pl is not fully worked out architecturall the chimneys illustrate it, rising up long ugly lines like nineteenth centu party-wall stacks, showing a want of th combination and grouping for which skilful architect will always provide.

Charlton.

From a visit to Charlton, near Greewich, the author could not gather th there was much evidence of Inigo Jone work. There was a hall mantelpie which seemed to have some character.

The leading idea at Charlton is t Great Chamber, then coming into favo and destined to supersede the older galle and, on the outside, a combination of great mullioned bay with returned a mitred entablatures as a crowning featu

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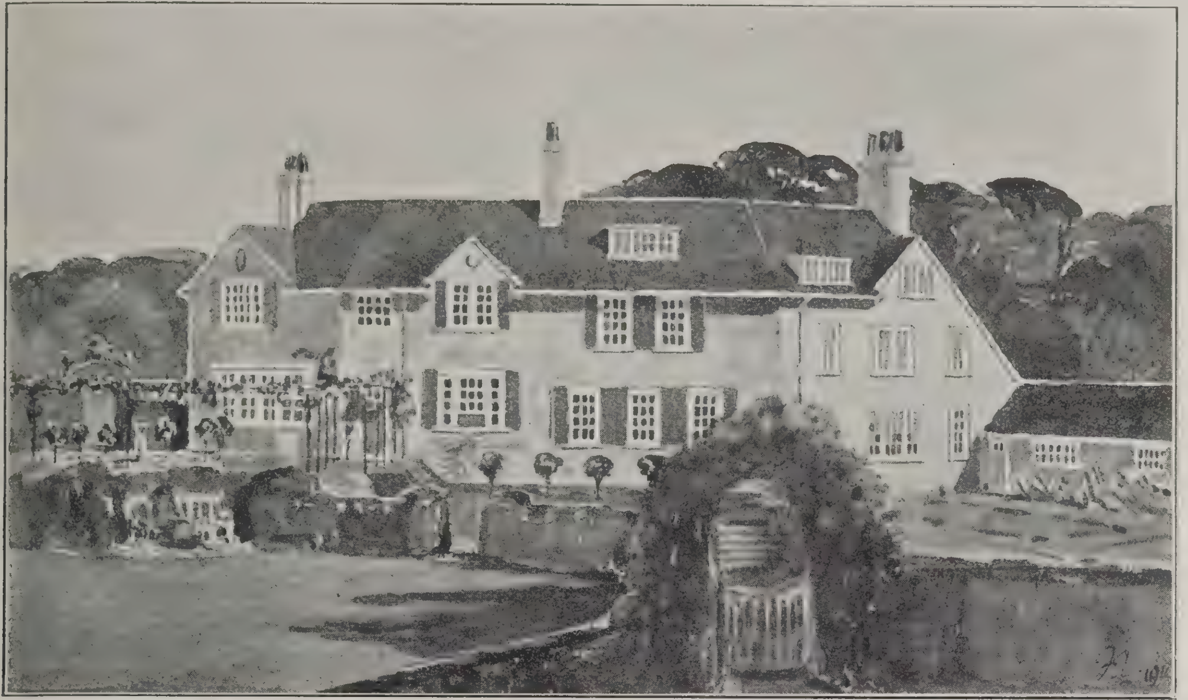
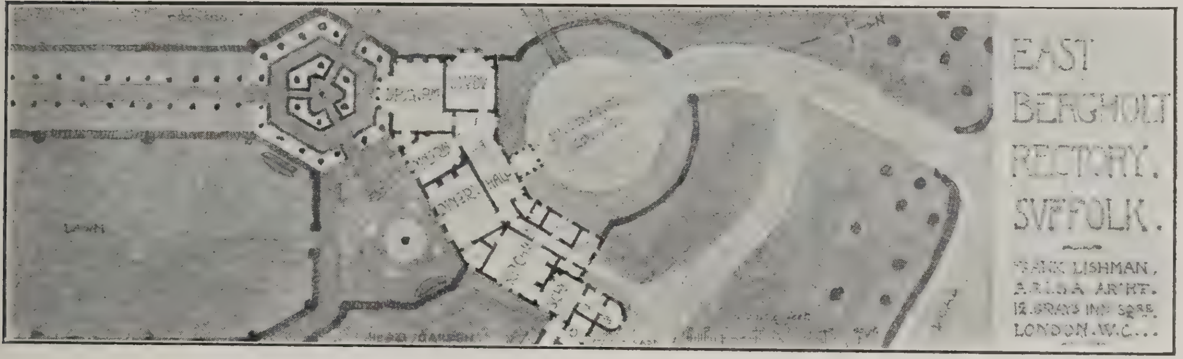
*Extracts from a paper read before the Architectural Association on Monday, November 27th.

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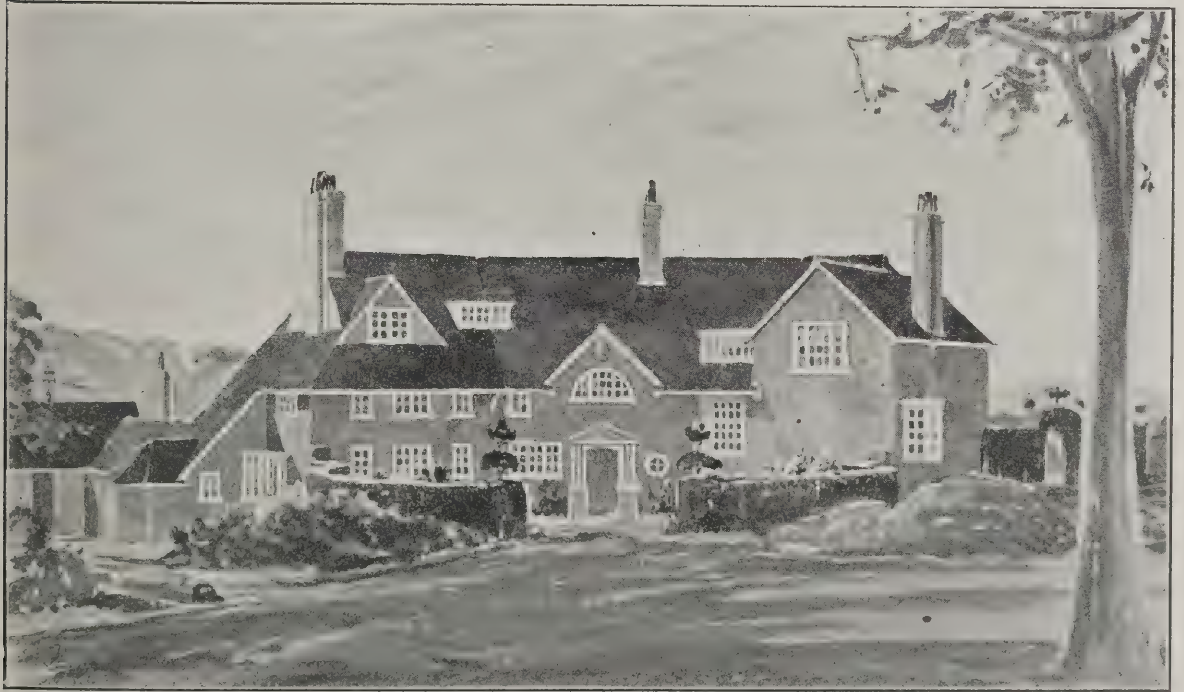

(*For particulars see page 571.*)

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IR. SIDNEY D. KITSON ON ARCHITECTURAL TOPICS.*

As reported in last week's issue, at p. xvi., the annual general meeting of the eeds and Yorkshire Architectural Society was held at the Queen's Hotel, Leeds, on ovember 16th, when Mr. Sidney D. Kitson, M.A., F.R.I.B.A., who is entering upon is second year of office, delivered his presidential address, in which he dealt with a ariety of interesting architectural topics.

After referring to the Society's loss of e services as secretary of Mr. Ralph horp, A.R.I.B.A., who has gone to anada, and who, said Mr. Kitson, "won e good opinion of all our members by is courtesy and efficiency, and our good ishes follow him," and having welcomed, s an able successor to Mr. Thorp, Mr. V. Whitehead, A.R.I.B.A., Mr. Kitson roceeded to say that the year that has ist passed has not been an important one the history of this society. But happy the society which has no history, and e object of this society is not to make istory, but to go quietly on its way, as permanent and unpretentious guardian f the interests of architecture and architects in this province. It is its business to old a watching brief, and not to take ction unless its good offices are required r its intervention is tolerably certain of ccess. Nothing is so harmful to a ciety such as ours as undue haste in ction or the tendency of unasked-for dvice which is likely not to be accepted; nd I assure you that it has done a conderable amount of quiet, unseen, but one the less useful, work during the ast session.

Official Architecture.

There are points, however, of a more ublic nature which the Council might ell take in hand in the near future; such, r instance, as a firm protest against e increase of official architecture, which becoming a menace to practising architcts, and which is costing the ratepayers nd taxpayers—as was so ably pointed ut by Mr. Leonard Stokes in his presiential address at the R.I.B.A. the other ight—considerably more than if the ork were put out in the fairer and more asonable way to rate-paying and taxaying architects.

Points for Registration.

Another point which has been discussed y our Council more than once is the owing evil of builders who make their wn plans with one hand and hold out eir caps with the other to architects to ve them work. It is a cardinal fact of emental justice that a man cannot eat s cake and have it; and if a firm and nited attitude were to be adopted by embers of this society, it is reasonable suppose that those misguided builders uld be made by practical means effecvely to see the errors of their ways. nd this brings me to the time-worn subct of registration, a subject which reiires no arguments in its favour here. own that in my early days I was opposed registration; but experience has taught e to be a thorough-going advocate of at policy. It is unnecessary at this ne of day, when every trade and prossion has formed itself into a trade union. point out the advantages which would crue to our profession by a closer union d a sterner discipline. It ought to be possible for an employer to bargain r a less remuneration than the modest inimum prescribed by the Institute, or r an architect to agree to such an rangement. It ought to be impossible that architectural work should be done by builders, plumbers, rent collectors, and undertakers.

The Institute and the Society.

The Institute is moving slowly but surely towards this achievement. The policy was ably advocated years ago by one of our ex-presidents, Mr. J. W. Connon; and it has been endorsed, I think, by everyone else who has occupied this chair. Nearly 2,000 Licentiates have already been enrolled in the ranks of the Institute. Thus a most useful element of solidarity has been obtained in furtherance of the policy of registration. No application for the Licentiateship will be entertained after next June, and therefore all members of this society who are eligible and still remain outside the Institute are urged to avail themselves of the opportunity. The Council of the Institute have pledged themselves to elect as Licentiates all who are recommended by the council of their local society without further formality. The amalgamation of the Society of Architects with the Institute seems likely to be accomplished in the near future. This statesmanlike arrangement has meant self-sacrifice and the exercise of much tact and common sense on both sides. The fact that such qualities have been so fully shown in these negotiations is a guarantee for the successful termination of the campaign for the statutory recognition of architects.

Raising the Standard.

All this is perhaps rather dull, but I am convinced it is of the utmost importance to the profession. The reason why in the past men have held aloof from the movement is that they felt that it would mean the embracing of all—good, bad and indifferent—who professed architecture. It has come clearly to be realised that statutory recognition is necessary because, among other things, of the increasing and intolerable burdens which recent legal decisions, with almost impish ingenuity, continue to pile up upon the poor architect. . . It will be the part of architectural education, which has made such rapid strides in late years, to raise the standard, and to weed out the unfit. And so in time, though we may not live to see it, Architecture will take her place beside Medicine as a well-organised and disciplined profession, doing a work hardly less important than that of Medicine for the benefit of the community.

Rome or Leeds?

The most important thing of all in connection with the profession is the provision of education. Twenty years ago architectural education outside the usual office routine of pupilage hardly existed. Much progress has been made since then, and the proposed establishment of a British School of Art and Architecture at Rome is another step in advance. Hitherto the winners of studentships have wandered, sketch-book in hand, over Europe, filling up their time, doubtless very pleasantly, but, in most cases, perhaps, with little or no discretion or continuity in their efforts. Whether Rome at the present day is the best place for the study of living architecture is, I think, open to doubt. But if we cannot all go to Rome, it is open to all students in this province to attend the architectural school at the Leeds School of Art, where, under the direction of Mr. Coombs, a very thorough and sympathetic teaching is to be obtained.

The work sent in by our students is always an interesting demonstration of the standard of architectural education at the time. One learns what they are thinking about, what are their preferences, and what is their present idea of architectural design and achievement. This year the work is of a high quality, but there is not enough of it. Consequently the competition has been poor, although the work which has been submitted has, in nearly every case, reached a sufficiently high level as to demand and to obtain a prize. The President then offered a critical commentary on the results of the various competitions promoted by the society.

Leeds and the Smoke Problem.

Having quoted from various sources some rather unduly severe strictures on the alleged unloveliness of Leeds, Mr. Kitson commented as follows: It is inevitable that the stranger who approaches Leeds, expecting to find it a Vienna or a Paris, should be disappointed. Nor has the claim yet been made for the City that it is a health or pleasure resort. But it is a great manufacturing centre, where nearly half a million people live and work probably as hard as in any other town in the world. And by reason of the strenuousness of their lives, sunshine and pure air should be all the more necessary to their existence. Only recently a professor, speaking in Sheffield, told his audience that smoke was essential for the production of the best steel. But surely, as Mr. Gladstone once said with reference to another matter in a place not a hundred yards from where we now are, "the resources of civilization are not yet exhausted." And it is difficult to believe that science could not produce the best steel by a more cleanly method if it was made worth the while of science to do so. People have grown so used to what is really a reproach to our civilization, or they are so busy in making money, that they have come to regard our smokeladen atmosphere with regret, certainly, but with resignation. The architect suffers from this nuisance perhaps more than any other member of the community; for the public are disinclined to put up good buildings when they know that they will be shrouded in soot within a year after erection. Recently a miniature "White City" has been growing up at the bottom of East Parade, built of a white terracotta of local manufacture, which has done much to brighten the neighbourhood. But this material is, after all, only a palliative.

Town Planning in Colliery Districts.

Town planning in our province has not yet passed out of the region of talk into that of practical politics. A very generally expressed desire has been, however, shown that the new colliery districts so rapidly growing up round Doncaster should be something better than the sordid mining villages to which we are accustomed. The Archbishop of York said, the other day, that now our municipalities had great opportunities put into their hands, and he believed that had there been more care and desire in the past to check individual enterprises by the common good, they would have been able to present to the world something that was not only stimulating, but something more beautiful and healthy than those amorphous streets which crawled up and down like ugly insects in the manufacturing districts of Yorkshire.

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*Extracts from Presidential address delivered at annual general meeting of the Leeds and Yorkre Architectural Society, November 16th.

A Gloomy Hamlet of a Building.

In Halifax a competition with prizes given by the local member has been held for the best plan for improving the laying out both of the town and suburbs. It is much to be desired that a similar competition should be held in Leeds. There seems an opportunity now, when additional municipal accommodation is so urgently needed, and when the infirmary is embarked upon an extension scheme that the approaches to the Town Hall—which stands in its inky cloak, as a sort of Hamlet among the buildings of the world, bemused by its own surroundings—should be widened and improved. No street alteration of any kind has taken place here since the Town Hall was built, and surely it is high time that the setting to the fabric which our forebears wrought so well should be taken in hand.

Grouping and Correlation of Buildings.

There is now the chance for the correlation of some of the more important of our public buildings. The obvious truth cannot be too often repeated, that one fine building does not make a fine city; but the wise grouping together of fine buildings not only doubles the value of those buildings themselves, but also provides the only elements of which a stately city is made. In an interesting address which the City Engineer, Mr. Lancashire, read to the Association of Municipal Engineers last summer upon the development of Leeds, he said "although recent improvements have resulted in the possession of many streets and buildings of which Leeds is justly proud, it cannot be argued that reconstruction is as satisfactory as construction properly planned in the first instance, even apart from the extremely heavy extra cost. One is bound to realise that, in some cases, there has been no design beyond street widening for better travelling facilities,no motive beyond the wider streets and the better buildings which have followed the widenings; and some of the fine new buildings have been erected where it is impossible to appreciate properly the full beauty of the architect's creation."

Tidying Up the Suburbs.

Now that the population of Leeds has become steady and almost stationary, and now that it is no longer needful that the owner of agricultural land at some remote distance from the city should display a notice board calling attention to his "ripe building land," the opportunity arises for a general tidying up in our suburbs. There is no longer any reason why they should resemble a miners' camp or a navvies' settlement—all barbed wire and empty tins. Because every plot in a suburban road is not built upon, it seems hard on the unfortunate people who are there that their roads should be entirely unmade and often impassable. Even now, by the exercise of some thought and by the co-operation of adjoining owners, the suburbs might be opened out from the blind alley condition in which they have so often grown up.

Probably the most important building enterprise in this neighbourhood at the present time is the City of Leeds Training College and its fleet of attendant hostels. There every care has been taken with the disposition and grouping of the various buildings; and this forethought will, I think, result in an interesting and a satisfactory lay-out. There is every chance, too, that the suburb which will grow up around it will be carefully and effectively planned.

For the first time there is a Lord Mayor of Leeds who is connected with the building trades; and we may rest assured that Mr. Nicholson, who is an honorary member of our society, will do what he can to promote its best interests during his term of office.

Happy Provincials!

Now nothing remains but to wish you a pleasant and prosperous year. The happiest life that a man can lead is an architect's life if his interests and sympathies lie that way. And, I would add, the happiest architects are the provincial architects, for they usually have a greater range and variety in their work, and have more varied lay interests than is possible to Londoners. And, to crown all, they have the open country at their back with all that it means to a man's health and spirits. Nor does it seem needful now that a traditional style is once more beginning to emerge from the chaos of clever eclecticism, and now that opportunities for study are so much greater, that the design of provincial architects should be measurably inferior to that of their London brethren.

Professor Blomfield's Beautiful Boomerang.

Professor Blomfield, indeed, in his history of English Renaissance Architecture, spoke of "the technical inferiority in design which has to some extent characterised the work of provincial architects since the eighteenth century. Yet of the ten best designs which he as assessor in the recent Manchester Art Gallery competition selected, seven, if I mistake not, were the work of provincial architects; and one of the selected ten designs was by the treasurer of this society. This occurred, mind you, in a competition calling for the highest qualities in monumental planning and design.

So, although it is quite certain that we cannot all be men of genius, we can at any rate see to it that our buildings shall fulfil the sound and common-sense requirements of Inigo Jones and be "solid, masculine, and unaffected." We can put the best that is in us into our work, play the game, and mind our own business, and thus ensure happiness not only to ourselves but to those who came in contact with us.

DURABILITY OF STRUCTURAL STEEL.

The Gillender Building, a 16-storey structure in New York City, which was erected in 1896, was demolished about a year ago to make room for a larger building. An examination of the steel framework was made, and the details of the inspector's report have been made public. As a whole the steel was in very good condition. The columns in a number of cases were absolutely devoid of paint, for they were encased in a cement grout composed of equal proportions of cement and sand, which had completely destroyed the linseed oil used as a binder. When the column footing, grillages, and girders were exposed they were also found to be in an excellent state of preservation, and here the paint was apparently still wet. Analysis, however, proved that what appeared to be fresh oil paint was an oil soap without any trace of oil except as calcium oleate, the balance of it being water. The paint was still bright, and had the appearance of red lead, although when tested in the laboratory it was found to contain over 42 per cent. of oxide of iron and no lead whatever, thus indicating that under similar conditions oxide of iron is as perfect a protector as oxide of lead. A careful examination of the cement grout showed that it had completely set on its inner surface, but not on the outer. A briquette made from the ground grout to which water had been added showed considerable tensile strength. No trace of rust was noticeable on the girders.

GLASTONBURY ABBEY.

Mr. Frederick Bligh Bond delivered last week, before the Bath Literary and Philosophical Association, a lecture on "The Abbey Church and Monastic Buildings of Glastonbury."

Mr. Bond, who, by the aid of a fine collection of lantern slides, admirably shown, conveyed an excellent idea of the foundation as it now stands, dealt in opening with Glastonbury as an early English settlement, where there was, at any rate, a sort of monastic establishment at a very early date. The first record they had of it was about the beginning of the 7th century. The monks at that time were like hermits planted around the church, a similar establishment to that which was to be found in Egypt. From the East such a settlement came to Ireland, and then to England. The old wooden church at which the monks worshipped existed in some form or another for 1,000 years until the year 1184, when a great fire destroyed the whole of the monastic buildings, together with the old wooden church. Immediately afterwards, however, the monks set to work to replace their loss, and within a space of three years a beautiful chapel had been erected. This took from 1184 to 1187 to build, and it was consecrated by Segmold, Bishop of Wells, in that year.

In 1184 the early Gothic style was introduced into various forms of buildings, but somehow the old Roman style wa chosen for the monastery. The reason was that the veneration for the past wa so strong in Glastonbury that they desire to keep up the old style of architecture Mr. Bond supplied many interesting details as to the building of the grea Abbey Church and St. Mary's Chapel, th Romanesque style prevailing. Numerou slides giving an admirable idea of the bol outlines of the architectural features o the chapel were shown. In several instances it was to be noticed that the sculptor had left his work uncompleted. In thi condition it remained from 1186 to th present day. The picturesque carving o the window edgings displayed excellen workmanship, there being nothing of th barbaric or uncouth about the decorativ heads. Indeed, said the lecturer, the were worthy of the Italian sculptors, al having some symbolic meaning.

The lecturer having dealt with th mediæval changes and additions, pointe out that the Abbey had since the Dissolution had a sad history. It had been lease to individuals, who had merely taken in order to get out the stones which ha been used to build houses, sheds, and cottages within a radius of 10 miles. Althoug these had committed serious depredations there was still a large portion of the Abbe left, which, under the care of the trustees had been considerably improved by th erection of buttresses. Mr. Bond trace the introduction of the Benedictine rul into Britain by Dunstan. This orde occupied the Abbey right down to the Di solution in the time of King Henry VIII fter Dunstan the Normans came in, and 'illiam the Conqueror put in a Norman ; an Abbot. Dissension followed, and .e Norman Abbot returned to Nor- iandy. Following the fire, the rebuilding as carried out by Ralph Fitzstephen, a :lation of the king. Mr. Bond, however, ıpplied, in passing, a record of the van- alisms and the loss of features, supplied :veral conjectural views of the interior, ıding his knowledge to that gleaned by rofessor Willis, of Glastonbury. These ıcluded descriptions of the Edgar hapel, the cloisters, refectory, the North ɔrch, St. Dunstan's Chapel, the chapel of ıe Loretto. He also dealt with the miss- g features of the transepts, and the prob- ɔle plan of the early buildings. The fact .at traces of a Roman settlement close 'r had been unearthed came as a surprise many, but Mr. Bond was unable to ıpply minute details pending further in- :stigations. He gave an account of the ·obable meaning of early carvings, and easurements of the extent of early build- gs, as deduced from painstaking study the plans and other data.

ARCHITECTURE IN THE COTSWOLDS.

The tradition of the Cotswold architec- re has never been broken, each succes- ve generation having added what it held be improvements which have almost ıperceptibly changed the general char- ter of the houses; but since the time of izabeth, at any rate, the changes have en so slight that the beautiful Eliza- than manor of Owlpen, near Uley, does ıt strike one as in any sense old- shioned as regards its construction when mpared with houses built within the last w years in the same tradition. Like all ɔtswold houses, it is built of the local lite, which, pale gold when newly arried, soon becomes a warm grey on posure to the air; and, like almost all ɔtswold houses, it has the mullioned ndows in diminishing tiers.

The oval window in the apex of the ble, common in the Stroud district, is parently a Flemish introduction by the avers imported by Edward III., or ssibly by the later Huguenot refugees. iese, although very decorative from the tside, serve insufficiently to light the acious attics, which are also character- ic of Cotswold houses.

The masons of the district, says Mr. axwell Armfield, in an American paper, e possessed of considerable skill, and eir rare lapses into decoration such as lls and finials are always charmingly oportioned and placed. The stone itself ries considerably in different parts, some ing only suitable for indoor work, and ıers for tiles. Near Tetbury are found ge circular sheets of stone which have en worn by sand under water at some riod; these are noted for making the ne roof tiles which constitute one of e great charms of the houses. The best ilding stone, which is almost as hard granite, is found on the Minchinhamp ı Common, and is known all over the untry as 'Hampton stone.

According to Mr. J. Allen Howe ("The ology of Building Stones"), the Min- inhampton "weather stone" is "a hard, n-absorbent stone, oolitic and shelly, d in places sandy. It is somewhat arse in texture, and liable to variation, t when carefully selected and dried in open before use it is a very durable ne."

There are strangely few churches of any size or architectural interest, but sometimes one may come across a bit of Saxon work, such as a window cut from a solid block of stone, still showing the holes into which the wattles were fixed for the clay and wicker walls.

The houses are of three sorts, the manor house or small country mansion, the large farmhouse, and the cottage. Perhaps the most interesting are the farmhouses, for they are usually surrounded by barns and out-houses full of quaint corners and solid sense. They are often of considerable size, as the sheep farmer of the past was a wealthy man, and doubly so if he happened to own a small strip of land by a stream where he could set up a wheel and shrink the cloth woven by the cottagers, into that thick matted broadcloth it is impossible to wear out. The farmer's translation from this state into that of mill-owner is of comparatively recent date, and for the most part the large houses of mill-owners are of the early Victorian type, whose blank façades may be met with all over the country without much variation. The tradition seems to have lapsed at this period in the case of the larger houses, but the few cottages that were built continued the old method of building.

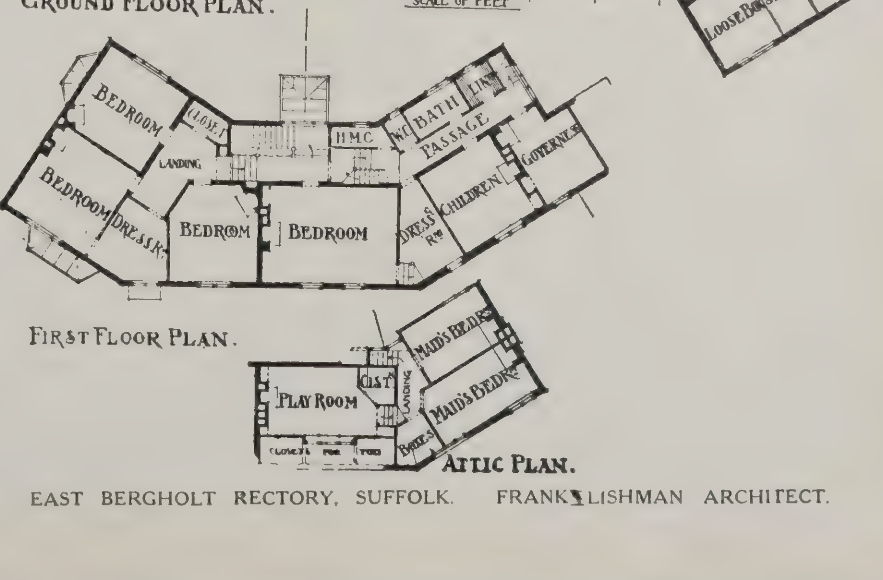
Recently the district has received an impetus from its popularity as a residential quarter, as well as from the new trades that are rapidly springing up along the valleys, and no part of the country has suffered less from the late Victorian jerry-builder than has the Cotswold district, chiefly because there was little building needed at that time. Its renaissance, later than that of the north, has come when the dignity of architecture is once more considered to some extent, and it has the inestimable advantage of 50 years of factory building as a warning.

The houses now being built are for the most part traditional in the best sense, the architects using the best of the old and adapting it to modern requirements in such a way as to make one truly grateful, and it only remains for the mill-owners to realise their responsibility to the district and employ intelligent architects, in order to insure the continued improvement, instead of deterioration of district as its prosperity increases.

At the present moment there is being built at Rodmarton a gentleman's country house, which is a perfect example of the liveness of the traditional work in this neighbourhood. The scheme includes a walled garden for fruit and vegetables, a pleasure garden with stone fountain, and a little summer house, all planned to harmonise with the house. The place is entered through an archway flanked on one side by the chauffeur's cottage, and on the other by a garage, then across an open yard we reach the delightful entrance gate to the kitchen yard, in which the pigeons have their home. Beyond lies the house which is not yet completed, with its separate entrance. One detail which will certainly attract visitors is a domed summer-house built into the thickness of the wall just under the ladies' sitting room, from which the stone-flagged garden paths stretch away to the broad green lawns, and beyond them and across fields upon fields of corn and grazing cattle, one sees the low blue Berkshire downs.

EAST BERGHOLT RECTORY, SUFFOLK.

The old rectory being inconvenient and at some distance from the church, was sold and the proceeds allotted to augmenting the benefice, purchasing a new site nearer the church, and building this new rectory house thereon. The plan is the direct outcome of the conditions of the site: levels, approach, aspect, and prospect. The best view is to the south-east, while the house may be seen equally from all sides. The walls are of brick, covered with cement rough-cast, the roofs being laid with brown sand-faced tiles. For water supply a tube well was sunk some 220 ft. The general contractor was Mr. W. T. Wheeler, of East Bergholt. The architect was Mr. Frank Lishman, of 12, Gray's Inn Square, W.C.



EAST BERGHOLT RECTORY, SUFFOLK. FRANK LISHMAN ARCHITECT.

UNION CABLE COMPANY'S WORKS, DAGENHAM DOCK, ESSEX.

This building, to be occupied by the Union Cable Company of London, will be completed in the course of a few weeks. It is being erected by Messrs. Samuel Williams and Sons upon their own estate. The construction is entirely of reinforced concrete, with the exception of the steel and timber roof to the machinery section. The floor of the works is raised some 4 ft. above the general ground level, the beams under which are worked into and made as part of the piles. The piles are built on the "Williams" patented system, and stanchions on them are carried up continuously to the roof-springing, forming piers to the main walls.

In the four-storey office block the same construction obtains. As a covering wall to works and office buildings, concrete blocks, V-jointed and hollow, are used. Down the side of the works, throughout the whole length, runs a reinforced concrete platform at the same level as the works floor, to facilitate the loading and unloading from railway waggons of materials or full electric cable drums. The roof over the works portion is of 2½ in. planking covered with Ruberoid. The roof over the office building is flat and forms a water tank.

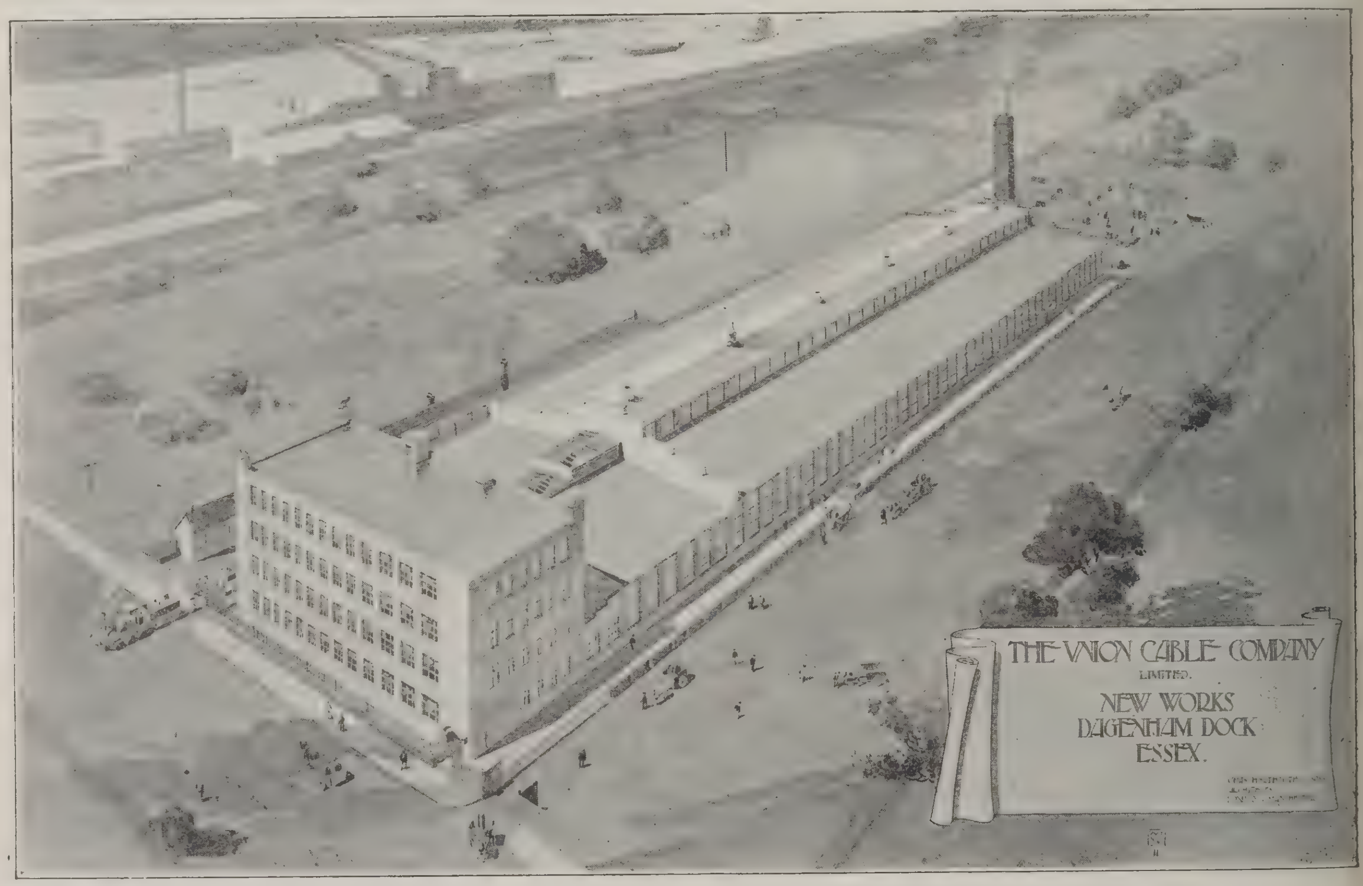
The works are supplied with electric current from Messrs. Samuel Williams and Sons' generating station near the dock, and with pure water from artesian wells on the estate.

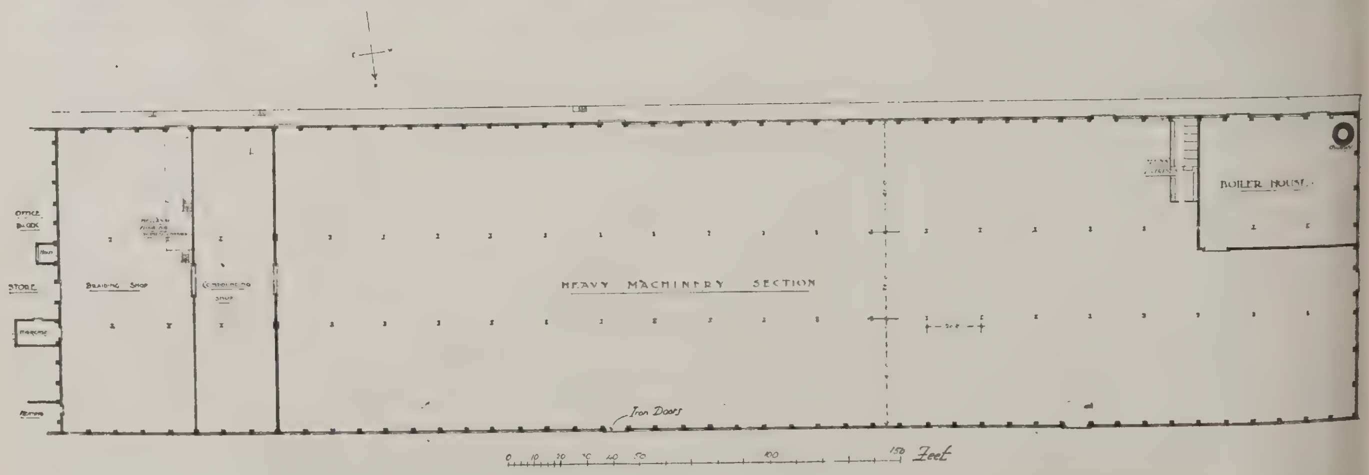
A system of sprinklers and hydrants is being installed. The concrete floor of the works and ground floor of the office building is covered with 3 in. deal block paving. The upper floors of the office building are finished with Doloment flooring on the concrete base. The office block contains four floors, each floor covering an area of 5,200 sq. ft. The light machinery portion of the works covers 9,550 sq. ft., and the main machinery section 47,500 sq. ft. The total floor area covered is 77,850 sq. ft.

A view and plan of the building are given below: In the distance can be seen the Dreadnought "Thunderer," which is being completed on the river alongside the piers of Messrs. Samuel Williams and Sons.

The names of the various contractors are here indicated: All the piling, reinforced concreting, block walling and roof timbering are being done by Messrs. Samuel Williams and Sons themselves; deal block flooring by Hollis Bros.; steel casements throughout in the works by Hayward Bros. and Eckstein; windows in office block by W. H. Witham; steelwork by Gilbert Heathcote and Co., Manchester; glazing by John Hall and Sons and Mellowes and Co.; light partition work by Muribloc, Ltd.; iron doors throughout by Milners; lift by Waygoods; heating throughout by Jas. Boyd and Sons.

The architects for the building are Messrs. Chas. Heathcote and Sons, of London and Manchester.





CHARLES HEATHCOTE AND SONS, ARCHITECTS.

THE A.A. CONVERSAZIONE.

At the annual conversazione of the rchitectural Association, at 18, Tufton treet, Westminster, on November 23rd, hen the guests were received by Mr. erald C. Horsley, the president, and rs. Horsley, there was an exhibition of ewellery, bronzes, silver and repoussé ork, pewter work, tapestries, embroideies and silks, and a special display of esigns and models for stage scenes lent y Mr. Gordon Craig. In the first floor allery also was an exhibition of photoraphs and sketches by members of the amera, Sketch, and Debate Club. hose lending exhibits for the evening ncluded Mrs. Margaret de Castro, Mr. nd Mrs. Arthur Gaskin, Mr. Harold tabler, Mr. J. Paul Cooper, Mr. Matt arbutt, Mr. Arthur T. Bolton, Mr. rnest W. Gimson, Mr. Walter Churcher, r. A. B. Yeates, Mr. George Jack, The rtificers' Guild (Limited), Messrs. Marin van Straaten and Co., and Messrs. arner and Sons. Those present inluded Sir George Frampton, R.A., Sir . Goscombe John, R.A., Sir Ernest eorge, A.R.A., Mr. Leonard Stokes, R.I.B.A., Mr. H. G. Wells, Mr. ewis Hind, Mr. Gordon Craig, Mr. A. J. inberg, Mr. Alfred Parsons, R.A., Mr. ohn Belcher, Mr. J. Stirling Lee, Mr. G. Jackson, Professor W. R. Colton, nd Mr. Stanhope Forbes, R.A.

LEGAL.

Arbitration on a Builder's Claim.

The arbitrator appointed to deal with a laim by the contractor of the Saltburn ew Primitive Methodist Church, for an mount withheld by the trustees, has given is award in favour of the contractor. The uilder was Mr. John G. Porteous, of Guisorough, who sought to recover the sum f £131 10s., withheld by the trustees owg to non-completion of buildings by conract date. The case was tried by Mr. John impson, vice-president of the R.I.B.A., t his offices, Verulam Buildings, Gray's nn Road, London, and commenced on ctober 26th, the hearing extending over ree days. Several witnesses were called n both sides, including Mr. J. W. White, f Sunderland (president of the National ederation of Building Trades Employers f Great Britain and Ireland) for the uilder, and the architects, Messrs. George aines and Son, London, for the trustees. -Mr. W. H. Hope, solicitor, of Messrs. itson and Hope, solicitors, Sunderland ecretary to the Northern Counties Fedeation of Building Trades Employers), apeared for the plaintiff, and Mr. H. H. chloesser, barrister, London, instructed y Messrs. Kenneth Brown, Baker, Baker, nd Co., London, appeared for the defendnts.—The arbitrator gave his award in vour of the plaintiff for the full amount aimed, with interest, together with costs f the action.

Singular Action by a Council.

A strange action, in which the plaintiffs ere the Westminster City Council, came efore Judge Woodfall in the Westminster ounty Court. The defendant was a uilder, who was sued by the council for amages suffered through the illegal removal of a public convenience from Brick treet, Piccadilly. Mr. Horton Smith, counsel for the plaintiffs, said that near to the Burlington Arcade, Piccadilly, was Cork Street, and a little way along that street was an archway leading to some mews. In that archway there had existed a public latrine since the year 1863. It was originally erected by the local vestry, and had been altered and reconstructed from time to time. On April 4 last, between two and six o'clock in the morning, police on duty in Cork Street saw a number of workmen demolishing the convenience, and later it was found that the structure had been carried bodily away. On inquiries being made at his establishment, the defendant said that he had received instructions to remove the building from a member of a firm of estate agents. The plaintiffs had been put to an expense of £62 to replace the building. After hearing evidence his Honour said that he could not find that the defendant had established anything like a contract with the estate agents to remove the structure. There would be a judgment for the council against the defendant for £59, and in favour of the estate agents as the third parties, though he could not give the latter their costs.

COMPETITIONS.

New Municipal Buildings, Marylebone.

The result of this competition is as follows:—(1), Mr. T. Edwin Cooper, F.R.I.B.A., (2) Mr. Thomas Wallis and Mr. J. A. Bowden, (3) Messrs. North and Robin, (4) Messrs. Warwick and Hall, AA.R.I.B.A.

LIST OF COMPETITIONS OPEN.

DECEMBER 30. WORKMEN'S DWELLINGS.—At the Eisteddfod, 1912, a prize of £50 will be offered for designs for workmen's dwellings. Apply to Welsh Housing Association, 9, Temple Chambers, E.C.

JAN. 1, 1912. INFIRMARY EXTENSION, ROCHDALE.—The Board of Management of the Rochdale Infirmary invite architects practising in Rochdale prior to January 1st, 1911, to submit plans, designs, and estimates for extending the present buildings. Conditions of competition and instructions to architects, together with other information can be obtained on application to T. Elvyn Kershaw, Secretary, the Infirmary, Rochdale. Mr. Alexander Graham, F.R.I.B.A., has been appointed assessor.

JANUARY 6, 1912. PUBLIC LIBRARY, STAFFORD.—The actual building is not to cost more than £4,000. Enquiries were to be sent to the Town Clerk, Stafford, not later than November 25, and designs must be sent in by January 6. The Borough Engineer states that applicants for particulars should have enclosed £1 deposit. Mr. Henry T. Hare, F.R.I.B.A., is assessor.

JAN. 6, 1912. CENTRAL HALL, OFFICES, AND CARETAKER'S HOUSE, BOLTON.—The Lancashire and Cheshire Miners' Federation invite architects in practice on their own account within a radius of 25 miles of the Town Hall, Bolton, to submit designs in competition for the above. The Committee of the Federation have appointed as assessor Mr. Jonathan Simpson, F.R.I.B.A., of Bolton. The premiums offered are £50 and £25 for the two best designs in order of merit as adjudged by the assessor. Conditions and instructions will be sent to architects on application to Messrs. Fielding and Fernihough, Solicitors, 7, Fold Street, Bolton, accompanied by a deposit of one guinea (returnable on fulfilment of conditions).

JANUARY 9, 1912. PUBLIC HALL, SPENNYMOOR.—Competitive designs are invited by the Spennymoor U.D.C. for a public hall, market, and offices.

JANUARY 20, 1912. STATUE AT HAVANA.—Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana, before January 20. The sum of 100,000 pesos (about £20,600) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., where also further particulars (in Spanish) may be seen.

JANUARY 29, 1912. GOVERNMENT PALACE, MONTEVIDEO.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640, and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

JANUARY 31, 1912. FEDERAL CAPITAL CITY, AUSTRALIA.—Competitive designs are invited by the Commonwealth of Australia, for the laying-out of the Federal Capital City. Premiums are offered as follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered by January 31st, 1912, to King O'Malley, Minister of State for Home Affairs, Commonwealth of Australia.

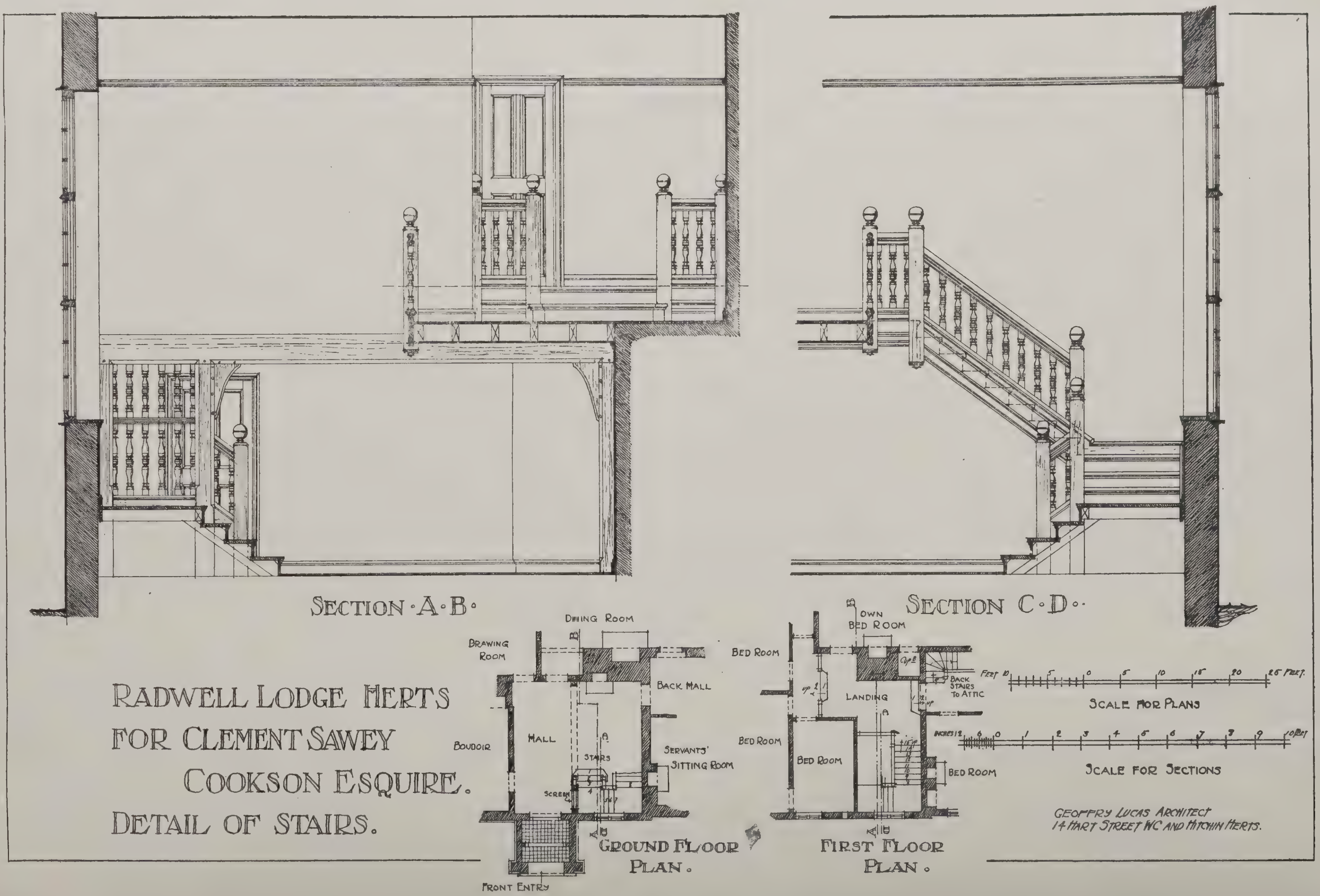
[The Institute of Architects of New South Wales and the R.I.B.A. have asked members and Licentiates not to take part in this competition unless the conditions are made more satisfactory. See our issue for November 8, p. 485, and article printed in the issue of November 22nd, p. 537.]

FEBRUARY 17, 1912. NEW OFFICES FOR THE PORT OF LONDON.—The Port of London Authority invite preliminary sketch designs for new head offices in Trinity Square, and for lay-out of a building site.

JULY 1, 1912. CITY EXTENSION SCHEME, DUSSELDORF. — Premiums £1,000 and £375. Particulars from the Chief Burgomaster, Dusseldorf.

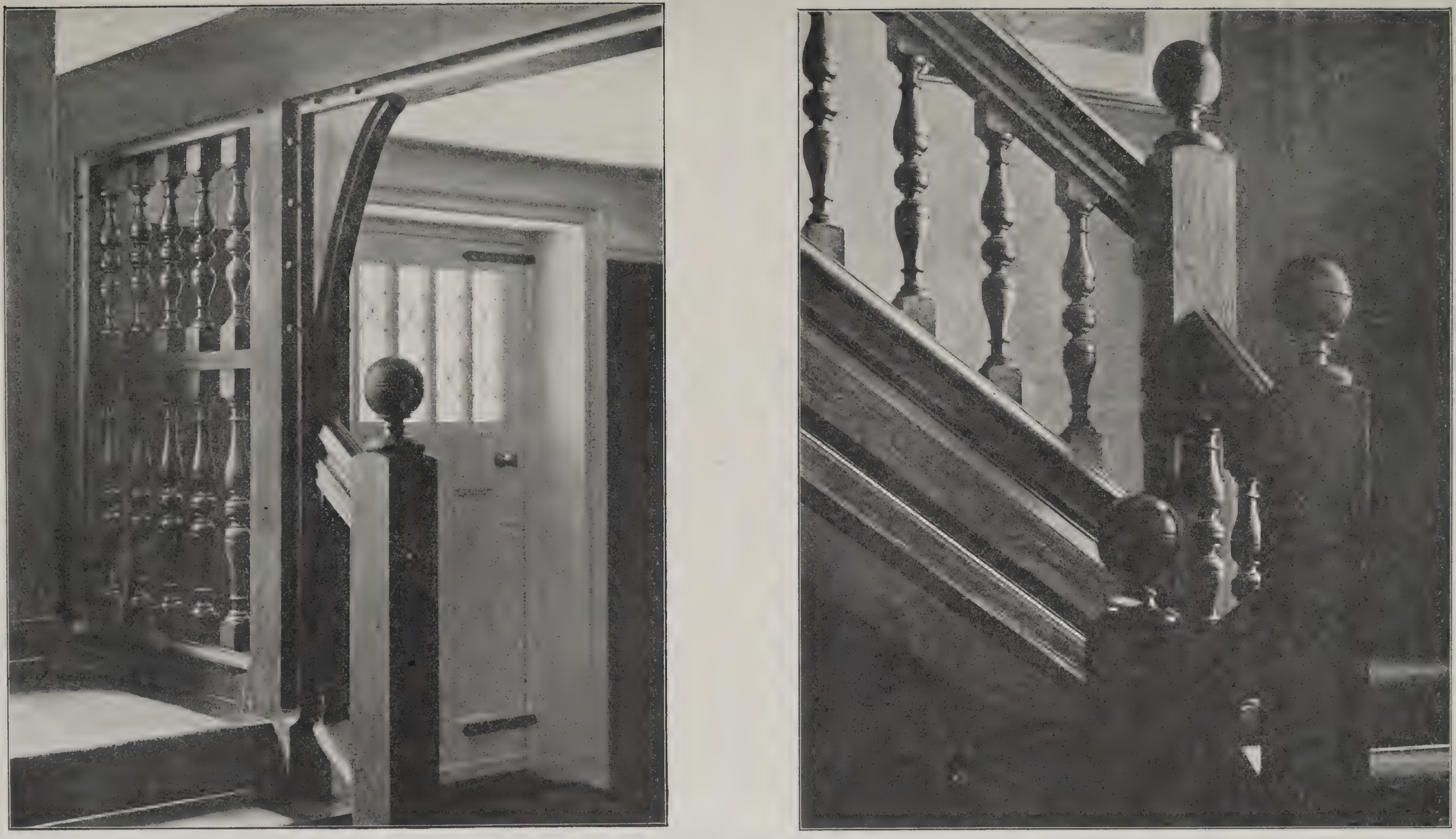
DETAILS, OLD & NEW.—XXXII.

"Radwell Lodge" is a remodelling and extension of an old house formerly attached to Radwell Mill. The staircase here shown is in the old portion of the house, leading up from the hall. It is of pine, stained to a dull rich brown colour; some of the heavy old timbers from the Mill having been used for beam and storey-posts. The contractors for the work were Messrs. T. Raban and Sons, of Baldock.

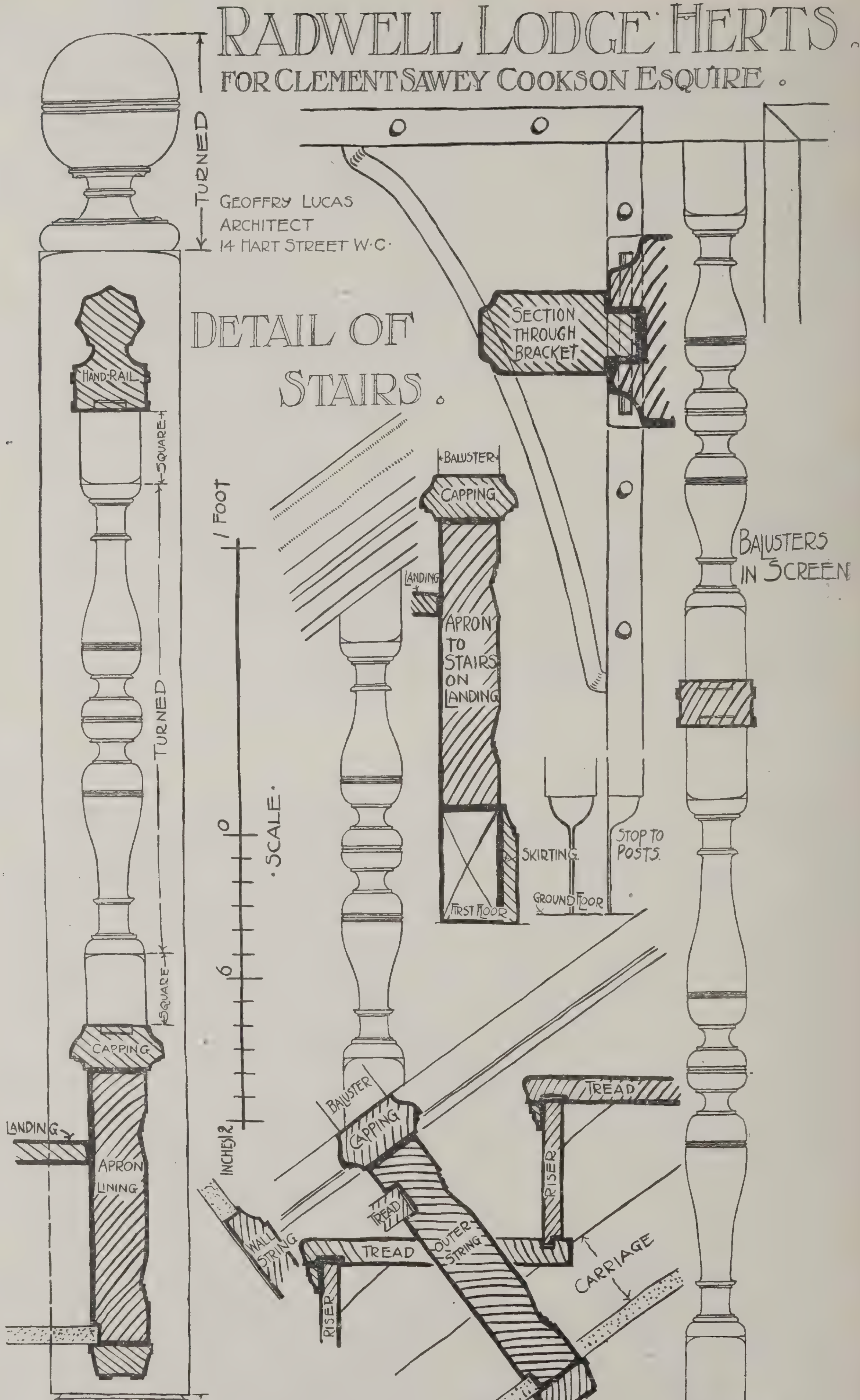


RADWELL LODGE HERTS
FOR CLEMENT SAWEY
COOKSON ESQUIRE.
DETAIL OF STAIRS.

GEOFFRY LUCAS, F.R.I.B.A., ARCHITECT.



DETAIL VIEWS OF STAIRCASE IN RADWELL LODGE, NEAR BALDOCK, HERTS. GEOFFRY LUCAS, F.R.I.B.A., ARCHITECT.



GEOFFRY LUCAS, F.R.I.B.A., ARCHITECT.

THE BRITISH SCHOOL AT ROME.

I was announced at the annual meeting
bscribers to the British School at
, held in the room of the Society of
quaries, Burlington House, that, with
id of the Royal Commissioners of the
bition of 1851, a scheme had been
ged for incorporating the School in
ger and more comprehensive institu-
which would secure for the British
n a worthy home for the study of the
Archæology, and Letters in Rome.
. Baker-Penoyre, the secretary, read
morandum on the subject, which has
drawn up by Lord Esher, and in
the nature of the scheme is set
in considerable detail. The memor-
m is as follows :—

Scheme of the Royal Commissioners.

the early part of the year (1911) the
l Commissioners for the Exhibition
51 resolved to establish a system of
lling scholarships in Architecture,
ture, and Decorative Painting on
somewhat similar to those of the
ch Prix de Rome, and in the course
eir inquiries they were advised to
the scholarships tenable in Rome.
accordingly approached the archæo-
al institution known as the British
ol at Rome, and arrangements were
t to be made with that body for pro-
g facilities for the Commissioners'
ars during their residence in Rome,
information was received that the
of the British Pavilion, erected from
design of Mr. Lutyens for the Inter-
nal Exhibition of Rome, had been
ed by the Italian municipal authori-
o Sir Rennell Rodd, the British Am-
dor, to be used for the purposes of
tish Institution of national interest.

he British Pavilion at the Rome Exhibition.

e Commissioners saw an opportunity
nly of acquiring a building for the
of their scholars, but also of render-
a substantial service to the higher
ation of this country. Accordingly,
the concurrence of the British School
ome, they intimated to Sir Rennell
that if the site in question were made
to them they would be willing to
hase and adapt the building for the
oses of an enlarged British School at
e, which should be made thoroughly
sentative of Art as well as Archæo-
Sir Rennell Rodd, who had in the
instance offered the site to the British
ol at Rome, subsequently, with their
urrence, made arrangements with the
an Government for the transfer of
ite to three nominees of the Crown—
ly, Prince Arthur of Connaught, Pre-
t of the Royal Commission, Lord
r, Chairman of the Executive, and
elf, Sir Rennell Rodd. Shortly after-
s Colonel Charlton Humphreys, the
of the firm of contractors who built
pavilion, and to whom it will revert
e close of the Exhibition, generously
rtook to present the building to the
missioners. Thereupon the Com-
oners, with the co-operation of the
sh School at Rome, who throughout
acted in a liberal spirit, showing a
sense of the public interests involved,
oached various bodies interested in
notably the Royal Academy, the
l Institute of British Architects, and
Royal Society of British Sculptors,
a view to enlisting their support in
cheme, and, being met with favour-
replies, proceeded to the work of
drawing up a draft Constitution for the new British School.

No Sectional Control.

The object of the Commissioners in taking a leading part in the establishment of the new School is to secure the institution from sectional control. While they desire that the artistic and archæological interests of the School should be managed by experts, they consider it essential that the general control of the School should be in the hands of a committee comprising a sufficient proportion of laymen along with representatives of these interests. The full details of the Constitution are not yet completed, as the desirability of drawing into the scheme various bodies other than those already mentioned (as well as individuals who, though not themselves artists, are immediately interested in artistic education) has made the work of adjustment and division of labour within the Constitution a long one.

The Objects in View.

As to the objects of the new School, it is intended to provide a centre in Rome where advanced students of Art and Letters may carry further those studies on which they have been engaged in the art schools and Universities of this country. Existing scholarships in Art enable a student to travel abroad for a short time and gain what inspiration he can from brief periods of study in the great art centres of the world. But it is of the greatest importance that a student should be able, by prolonged study in the atmosphere of a great art centre, to gain a thorough knowledge of the principles underlying the work of the great masters, and by that means to prepare himself for original work in the domain of art he has chosen. Such an opportunity for study and research in Archæology and History is already present in the existing institution at Rome, and the union of these two forces—Art and Letters—is not the least important feature of the new scheme. It is essential that some measure of guidance and supervision should be available for the students during their residence abroad, and it is the object of the School to meet these needs rather than to be in any sense a teaching institution.

Scholarships.

The Commissioners propose to award three scholarships annually, one in Architecture, one in Sculpture, and one in Decorative Painting, and as the scholarships will ordinarily be tenable from two to three years, there will be from six to nine scholars of the Commission always in residence. The School will, however, have accommodation for students holding scholarships in the gift of the Royal Academy and the Royal Institute of British Architects and other bodies, as well as for students of Art and Archæology pursuing their researches in and about Rome.

A Hostel Essential.

The Commissioners believe that a hostel is an essential part of the scheme. Living in Rome has of recent years become more expensive for young students working alone, and it was one of the objects of the Commissioners in promoting the scheme to relieve their scholars from material worries of any kind. The living accommodation at the hostel will be necessarily limited, but it is anticipated that the studio, library, and other working accommodation of the building will be sufficient for as many students of Art and Archæology as may be expected to make use of it.

The First Director.

The first Director of the new School will be Dr. Thomas Ashby, the Director of the present British School at Rome, and Mrs. Arthur Strong will, it is hoped, continue to give her valuable services to the School as Assistant-Director under the Faculty of Archæology. It is proposed to enlist the services of eminent artists who may be able to pay occasional visits to the School in order to assist and advise the Art students as occasion arises; but from the nature of the work and the high standard laid down for the scholarships it is not at present considered necessary to provide for the permanent retention of an artist's services in the School.

Forecast of the Organization.

The supreme control of the institution will be vested in a Council consisting of about 30 members, including representatives of the Royal Academy, Royal Institute of British Architects, and Royal Society of British Sculptors, archæological representatives of the existing British School at Rome, representatives of other bodies, and also individuals likely to be specially interested in the scheme. It is proposed that a small Executive Committee appointed by the Council should undertake the general control of the School, and that the purely artistic and archæological work should be organized and supervised by committees of experts forming the Faculties of Art and Archæology. The members of these faculties will be selected for their fitness for the work to be performed without any regard to the official positions they occupy. The intention is to form a Faculty of Art that will gain the confidence and support of the artistic world as a whole, while a like result is expected in the Archæological Faculty, the members of which are appointed by the subscribers to the existing British School at Rome.

Duties of the Executive Committee.

A precise definition of the duties of the Executive Committee and its relation to other bodies is difficult to put on paper at this stage. It is assumed, however, that the Executive Committee will be the main determining authority in matters of administration. It would therefore decide or report for the Council's decision, any question of policy affecting the School in Rome or in England, prepare the annual report on the whole School for the Council, nominate official representatives of the School for special occasions, and make arrangements for an annual meeting. It would be the central financial body receiving interest on endowments and investments and paying salaries, scholarships, and maintenance accounts. It would receive from the Faculties, and hand on to the staff in Rome for recommendation to the different Italian authorities concerned, all applications for *permessi*. It would appoint, or recommend to the Council for appointment, the officials of the School in Rome, settle the date of the terms or sessions, and authorize the absence of officials from Rome for special purposes. It would receive the Directors' representations, and give decisions on any more important *res domesticæ*—e.g., the condition of the fabric, the rules of the School, and allocation of quarters to students of various departments.

Faculty of Art.

The Faculty of Art would supervise the work of the various students of Art who may come to the School with existing scholarships given by such institutions as the Royal Academy, the Royal Institute of British Architects, the Royal College of Art, and other bodies, and would assist those students by drawing up courses of study which shall fulfil the conditions attached to those scholarships. It would formulate a scheme for the scholarships in Architecture, Sculpture, and Decorative Painting to be given by the Commissioners for the Exhibition of 1851. It would be responsible for the examination of the candidates, and would nominate the successful candidates for the Commissioners' election. It would further lay down courses of study which shall fulfil the conditions attached to these scholarships, and supervise the work of these scholars. It would advise the Executive Committee on all matters concerning the interests of the students under this Faculty; it would advise the Executive Committee respecting the appointment on the staff in Rome; it would further submit a report to that Committee on the work of the students for inclusion in the annual report.

It would arrange for an annual or periodical exhibition of the work done by students of the Faculty, and also possibly for the publication of the more important drawings.

Faculty of Archæology.

The Faculty of Archæology would carry on those researches hitherto prosecuted by the existing British School at Rome. It would continue to publish the series of volumes (Papers of the British School at Rome, Vols. I.-V.) containing researches, and also the Catalogue of the Municipal Museums of Rome on which the School has been at work for many years. It would continue to carry on topographical research and such excavations as are possible. It would, like the Faculty of Art, make representations from time to time to the Executive Committee respecting its interests in the appointments on the staff in Rome. It would continue to administer such scholarships as the Oxford, Pelham, Gilchrist, and other studentships; and it would collect funds for its archæological undertakings. It would hold an annual meeting of its subscribers, at which it would present an annual report and balance-sheet. The report would be submitted to the Executive Committee of the enlarged School to form a section of the annual report presented by that body to the Council.

Professor J. S. Reid, who presided at the meeting at which the above memorandum was read, mentioned that the Committee of the British School were conducting negotiations with the Royal Institute of British Architects, represented for this issue by Mr. J. W. Simpson, which gave good hope of success when the Commissioners of the Exhibition of 1851 came forward with a more comprehensive scheme for an institution which should embrace all British artistic and learned interests in Rome, as described in the memorandum drawn up by Lord Esher, to whose unfailing courtesy and unwearied attention to the subject he paid a high tribute.

The report was unanimously adopted

ENQUIRIES ANSWERED.

Machine for Washing Concrete.

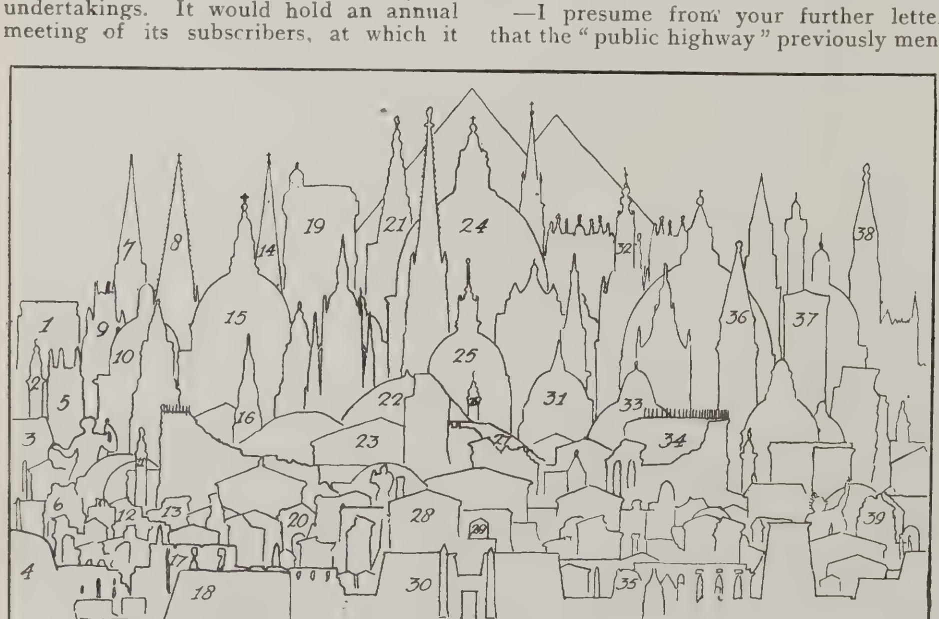
C.W. (Oxford) writes: "I should be glad if any of your readers could suggest a means of quickly washing sand for reinforced-concrete work. The appliance should be capable of turning out 15 tons per day. Fine sand and loam must be removed. Motive power could be applied by either steam or electricity."

—Perhaps some reader will kindly suggest an appliance.

Paving New Streets.

L. G. B. writes: "I am much obliged to you for the reply to my question on p. 474 in your issue for Nov. 1st, but I am afraid you have not quite understood that the street in question is, and always has been, a public highway, and this is the reason why the council have laid the kerb and the channels."

—I presume from your further letter that the "public highway" previously mentioned has already been "adopted" by
local sanitary authority—there is a gr
difference legally between the terms; ca
often occur where an old "public highw
becomes a "new street" within the me
ing of the Public Health Acts. There
no obligation either upon yourself or up
the council to pave the footways. F. S



(1) Notre Dame, Paris; (2) The Monument, London; (3) The Madeleine, Paris; (4) Temple, Abu Simbel; (5) York Minster; (6) Arch of Constantine; (7) Chartres Cathedral; (8) Freibourg Cathedral; (9) Boston Cathedral; (10) The Pantheon, Paris; (11) Trajan's Column; (12) Temple of Giants; (13) Elephantine; (14) Salisbury Cathedral; (15) St. Paul's Cathedral, London; (16) Bow Church, London; (17) Karnak; (18) Denderah; (19) Strasbourg; (20) Arch of Titus; (21) Cologne; (22) St. Sophia, Constantinople; (23) Baalbec; (24) St. Peter's, Rome; (25) The Invalides, Paris; (26) The July Column; (27) The Pantheon, Rome; (28) The Acropolis, Athens; (29) Temple of Victory; (30) Luxor; (31) Val de Grace; (32) Antwerp; (33) Baptistery, Pisa; (34) Colosseum, Rome; (35) The Sphynx; (36) Tower of St. Mark's, Venice; (37) Campanile, Florence; (38) Brussels; (39) Arch of Septimius Severus.

THE CHIEF BUILDINGS OF THE WORLD.

This is the key to Professor Cockerell's drawing reproduced as the centre plate in this issue.

Property Owner and Sanitary Author

Reader (Brighton) writes: "Can a lo
authority be compelled by a prope
owner in a rural district to bring a m
sewer along a public road to the near
accessible point to his private house, v
his gates? At present they refuse to do
apparently because he has other prope
nearer to their nearest sewer than is
private house. But this other property
entirely unconnected with his private ho
(it is a farm), and may be sold off separately at any time.

"I understand that a property owner
the country in another case, being serv
with sanitary notices in connection w
some of his property, demanded that
local authority should bring a sewer n
to the said property, and that they w
compelled to do so, though it cost c
siderably over £1,000."

—No, the power of an owner in t
respect is very limited. By Section 21
the Public Health Act, 1875, any own
within a sanitary district has the right
connect to an existing sewer, but he
no powers to compel the authority to ma
a new sewer. By Section 23 of the sa
Act the local sanitary authority can com
an owner (upon nuisance being proved)
connect to their sewer provided that
distance is not greater than a hundred fe
F. S. I

Cost of Labour in Lincolnshire.

C. H. and S. desire to know the cost
labour, in Lincolnshire, for laying 1,
bricks, and contingent works.

—Perhaps some reader will supply t
information.

Survey of 17th or 18th Century Hou
South London.

With further reference to the enqu
answered under the above heading in
issue for Nov. 22nd, a correspond
writes: "Last year I measured 'Fetch
Grove,' Leatherhead, for the Surveyo
Institution Intermediate Examinati
and it was accepted.. The ho
contains a basement, ground, first, a
second floors, thirteen bedrooms, billia
dining, drawing, and morning roo
and the usual offices. It stands in twe
acres of ground. Permission to meas
might be obtained from the owners. T
house is at present unoccupied."

Report on Sewage Disposal: Value of
Books.

Quex writes: "(1) In 'Municipal E
gineers' Specification,' 1905, I find ref
ence made to an expected Report by
Royal Commission on sewage dispos
Where may I obtain a copy of this R
port? (2) Please tell me the present mark
value of Taylor and Cresy's 'Antiquit
of Rome,' in two vols. (1822), complete a
in good order; also of Owen Jone
'Grammar of Ornament.'"

—(1) Messrs. Eyre and Spottiswoo
His Majesty's Printers, 6, Great New
E.C., would be able to supply informati
with respect to this question. (2) Mr. B.
Batsford writes: "The present mark
value of Taylor's 'Antiquities of Rom
would be about 30s., and the 1868 editi
of Owen Jones's 'Grammar of Ornamen
£1, but I am not at present desirous
purchasing copies."

Size of Rolled Joists.

O. (Shrewsbury) writes: "Kindly say the correct sizes for the steel joists can btained for the floor as sketched—ht of floor to be 1½ cwts. per ft. super. ld the joists be considered as canti- s or as continuous beams? The ar- ement of joists shown is done to save room in the room below, and to avoid ng such deep beams as would be ssary if the joists were carried straight s the whole span."

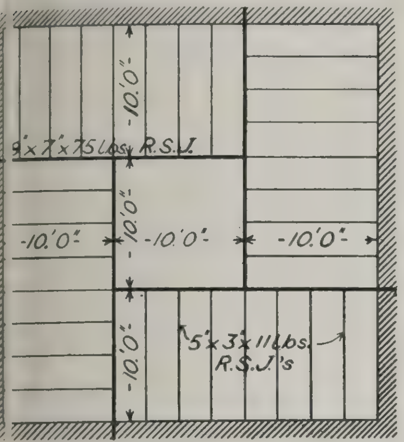


FIG. 1

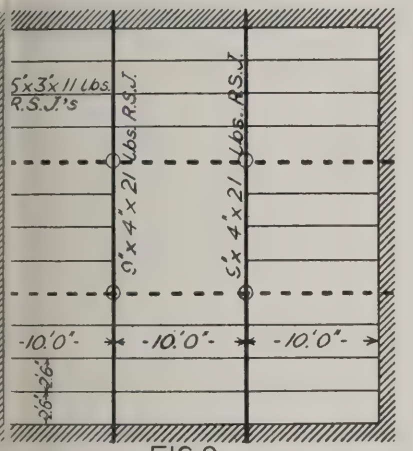


FIG. 2

Fig. 1 shows the sizes of joists re- ed for the method of framing the floor ested by this correspondent, and Fig. ows the sizes which would be required e floor were carried by four stanchions owing a great reduction in cost. The s shown by dotted lines may be either by 3 in. by 11 lb., leaving only two beams, or may be 9 in. by 4 in. by b., so as to divide the ceiling into re bays.

HENRY ADAMS.

SING AND DEMOLITION UNDER HOUSING AND TOWN PLANNING ACT, 1909.

ie Local Government Board have d a memorandum relative to the ation of the Housing and Town Plan- Act of 1909. This shows that during two years that the Act has been in ation action was taken by local orities in 18,869 cases, where it was that premises were not fit for habita- In 679 cases, the landlords elected to the houses instead of complying with notices to render the houses fit. In ly 12,000 cases the notices were satis- rily complied with, and of the re- ider 6,000 notices remained undisposed of at the end of March last. In regard to the closing and demolition of houses under the Act, representations were made to the local authorities last year in respect of some 24,000 houses. In 8,200 cases the houses were made fit for human habitation, or closed or demolished voluntarily, in 4,700 cases closing orders were made, and 484 houses were ordered to be demolished. The number of houses represented to the local authorities last year as justifying closing orders was about 3 2-3 times the number represented in the previous year, and the number of closing orders made was more than three times greater. Under the Housing of the Working Classes Act, the Board, for the ten months ended October 31st last, has sanctioned loans to local authorities amounting to £86,725. At the present time the Board has under consideration applications for sanction to loans totalling £185,000.

NEWS ITEMS.

Cement Packing.

It is stated that at Sydney, New South Wales labourers have refused to handle cement as now packed, alleging that dust escapes and affects their health. In order to overcome the difficulty, the factors are seeking to acquire an effective bag lined with paper.

Destructive Gales.

It's an ill wind that blows nobody any good. From South Shields it is reported that the builders there are exceedingly busy in consequence of the damage that was done to property by the recent gales. They have, it is said, enough orders in hand to keep them very busy until Christmas.

Birth of an Institution.

A special general meeting of the Association of Water Engineers will be held on Friday next, December 8th, at the Geological Society's Apartments, Burlington House, W., with the object of formally dissolving the Society and handing over its assets to the newly incorporated Institution of Water Engineers, into which the Association merges. Mr. Percy Griffith remains the secretary.

Painters' and Decorators' Exhibition at Leicester.

An exhibition of painters' and decorators' work was opened last week at the Carnegie Library, Leicester. It contained specimens of every branch of work, and all the exhibits which were awarded medals at the City and Guilds examinations. The Leicester Art School classes in these subjects are probably the most successful in the country. They are attended by 130 students, among whom are many whose work has won high awards.

Largest Laundry in the Kingdom.

It is stated that the White Star Line has just leased extensive premises in Rimrose Road, Bootle, for a laundry. The company already possess one at Southampton, and it has worked with such satisfactory results for the mail steamers of the White Star Line that a similar laundry, capable of dealing with 100,000 pieces of linen a week, is now to be fitted up in connection with the large fleet of passenger steamers despatched by the White Star Line from the Mersey. This laundry, which will be the largest of its kind in the kingdom, will be ready some time in the spring, and will be supplied with the most modern type of machinery driven by electric power from the Bootle Corporation main.

New Catholic Chapel, Penwortham.

A new chapel, to be dedicated to St. Mary Magdalene at Penwortham, is to be built in blue brick, the base and bands and general facings being formed of 2-in. rustic bricks, while the dressings will be of red Annan stone. Internally, the roof will be finished in wrought pitch-pine, and adorned with a decorative scheme of ornamental plaster work of Romanesque detail. The accommodation will be for 175 persons, and the cost of the building is estimated at about £1,600. The architect is Mr. J. H. Mangan, Lic.R.I.B.A.

Men's Club and Lads' Brigade Headquarters at Bournemouth.

New premises to accommodate a men's club and to serve as headquarters for the local Church Lads' Brigade were opened last week at Malmesbury Park Road, Bournemouth. The building, which is of brick, contains a large hall suitable for the drilling of boy scouts and members of the lads' brigade, as well as serving for a gymnasium. The men's club, adjoining the hall, comprises billiard-room, temperance refreshment bar, shooting gallery, skittle alley, and committee and reading room. The architect was Mr. G. Brumell, and the builder Mr. G. E. Head.

Lectures on Reinforced Concrete.

A course of lectures is being delivered at the Westminster Technical Institute, Vincent Square, on the principles of design in reinforced concrete, on Friday evenings. Architectural students, who have now to take that subject in the R.I.B.A. examinations, should find the course useful, as it would appear from the syllabus that the treatment, although comprehensive, is practical; theoretical points being illustrated by experiments, models, and lantern slides; and actual examples of design are worked out during each lecture. The lecturer is Mr. Percy J. Waldram, F.S.I.

Projected Rosyth Garden City.

Dunfermline Town Council have in course of preparation what is assumed in the "Scotsman" to be the most ambitious scheme of town planning which has been devised under the new Town Planning Act. They intend to incorporate, with the view of obtaining harmonious development, an area adjoining Inverkeithing burgh, which they dropped under their Extension Bill, in order to give Inverkeithing legitimate space for expansion. Embraced within the Council's proposals is the town planning of the 600 acres belonging to the Admiralty, which that body set aside for the erection of houses, in respect that it was not required by them for their dockyard projects. It is understood that in accordance with the statement before the Houses of Parliament of Sir Edward Rubon, the Admiralty's director of works, those 600 acres will be laid out as a garden city suburb. When the Corporation scheme is matured it will be submitted to the Admiralty, who, as in their former dealings with the Town Council of Dunfermline, will be guided greatly by the advice of the Scottish Local Government Board.

CORRESPONDENCE.

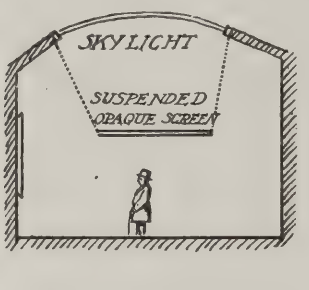
The Editors disclaim all responsibility for the statements made or opinions expressed by correspondents.

Correspondents are asked to be brief, and to write on one side of the paper only.

The Lighting of the National Gallery.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—With respect to your leading article on the above subject, the proposed horizontal screen over the centre of the room seems to be worth trying. It should not be close to the skylight, but considerably lower down, as sketch, so that the spectators are in shadow, and therefore do not appear reflected in the glass of pictures. All the light coming through the skylight would still be available for the pictures. The exact width and height of the screen should be ascertained by experiment.



W. B. HOPKINS.

Loads on Timber Beams.

To the Editor of the "ARCHITECTS' AND BUILDERS' JOURNAL."

SIR,—In the article on "Loads on Timber Beams," in the issue of "The Architects' and Builders' Journal" for November 15th, page 521, I notice that in the expression for bending moment

$$M_B=\frac{Wl}{8}$$

l is wrongly stated to be in feet, instead of in inches. It must, of course, be in inches if equated to a moment of resistance expressed in inch units. In the moment of resistance of a rectangular section also, which is given as

$$M_R=\frac{\frac{BD^3}{12}}{y}+f$$

the sign of addition has been used instead of the sign of multiplication.

The utmost care is necessary in preparing formulæ for reference, not only to insure their accuracy, but also that they are presented in the simplest and most explicit manner. In this case for instance, the moment of resistance (i.e., the moment of inertia of the section, divided by the distance of the furthest fibre from the neutral axis and multiplied by the maximum unit stress,

$$M_R=\frac{I}{y}\times f)$$

is best written

$$M_R=\frac{fbd^2}{6}$$

For a beam to be in equilibrium, this must equal the bending moment—

$$M_R=M_B$$

$$i.e.\ \frac{fbd^2}{6}=\frac{Wl}{8}$$

$$\therefore W=\frac{4fbd^2}{3l} \qquad (1)$$

all dimensions being in inches. But in the case under consideration, $f=\frac{1}{2}$ ton per square inch, and the span is usually given in feet. Let L=span in feet, then l=12L. Substituting these values in equation (1) we get—

$$W=\frac{bd^2}{18L} \qquad (2)$$

or in the square beams under consideration in the article, if s=the side of the square in inches,

$$W=\frac{s^3}{18L} \qquad (3)$$

The note-book entry should take the following form:—

Fir Beams.

Stress $=\frac{1}{2}$ ton per sq. in.
W=Distributed load in tons.
b=Breadth of beam in inches.
d=Depth of beam in inches.
s=Side of square beam in inches.
L=Length of span in feet.

Rectangular Beams.

$$W=\frac{bd^2}{18L}$$

Square Beams.

$$W=\frac{s^3}{18L}$$

The above gives the whole of the essential facts in the form best suited for rapid calculation.

FRANK H. JEFFREE, A.M.I.C.E., Wh.Ex.
Woodford, N.E.

Mr. Jeffree's letter was forwarded to the contributor of the article, who makes the following reply:—

SIR,—In my article, in the instance pointed out by Mr. Jeffree, feet were certainly given instead of inches; but anyone working out an example would have seen at once this was a slip only, and did not affect the tables or diagram.

With respect to the misprint of plus instead of the multiplication sign, I had already written you, and this error, of course, unfortunately accentuates the other.

Mr. Jeffree's remarks as to "utmost care being necessary in preparing formula for reference, so as to present them in their simplest form, etc., are perhaps rather superfluous. I may point out that the present case is not one in which the necessity for presenting the formula in its simplest form is required at all. A simple reference to the formula from which the tables, etc., are worked out was surely sufficient. I am quite aware that the formula can be reduced in the way your correspondent mentions. Any elementary text-book explains that; but I prefer my formula direct from first principles, viz., B.M.=M.R., without any reduction. I am of opinion that while the reduction of a formula for the use of persons who know nothing of its origin may be all very well, yet for those who have some knowledge of the subject, it is better retained or memorised from first principles.

HUGH S. CREGEEN.
Hove, Sussex.

Brighter Outlook for Welsh Slate Trade.

Mr. John E. Greaves, the Lord Lieutenant of Carnarvonshire, presiding at the annual meeting of the Festiniog Quarry Proprietors' Association, at Portmadoc, said that the Welsh slate trade had improved during the past twelve months, and the general outlook had become altogether brighter.

PICTURE EXHIBITIONS.

The New English Art Club.

The Exhibition of the New English
Club, at the Suffolk Street Gallery,
tains fewer of what we call unreason
pictures than usual, but on the other h
there is nothing very remarkable, un
we apply the term to Mr. John's "F
è Amore," which is remarkable enoug
a sense, no doubt. His half-length port
of Dr. Meyer, on the opposite wall,
rationally painted portrait of some po
There are some good landscapes,
successful in general as compositions
in respect of effect of light and air;
fessor Brown's "On the Banks of
Severn," for instance, and his "Br
north"; Mr. Russell's "The Ferry";
Holmes's "Fell Sikes," a really g
painting of a desolate-looking scene
"Glaramara" is too violent in its
trasts); Mr. Hayward's "A Bank of
Seine"; and Miss Alice Farmer's "A
Morning, Datchet." Some very
painted pictures illustrate the pecu
tendency of the New English Art
towards ugliness; its members appare
would prefer at any time to paint an
face rather than a beautiful one. Mr.
Glehn exhibits the only really plea
figure in the gallery, "The Black Turban
portrait of a pretty girl in a turban, pai
with great freedom and breadth of st
Mrs. Cheston's "Purbeck" is a good la
scape spoiled by too heavy a touch;
cannot get away from the paint.
Shepherd's little scene with a figure,
a London Garden," is really pleasant
in lighting and colour. One or two
hibitors interest us by taking subjects
usual with them; Mr. Mark Fisher
been painting flowers, and Mr. Syd
Lee, instead of buildings, gives us a wh
scene with the great red sail of a lig
as the prominent object; his "Gore
Scar" would be a good little landsca
it showed its scale better—it looks sm
than it is obviously intended to be.
Stabb, under the title "Winter Ke
shows a good interior scene of an old
ber-built barn, and Mr. Decille's "S
Street, Brighton," is a successful stud
a night effect.

The water-colour rooms contain a g
many clever but mostly very rough la
scape and town sketches; one exhib
seems to think it a good joke to draw
tinted sketches on a paper divided into
squares by cross lines. The very
number in the catalogue is a beautiful
delicate little landscape, "Hedge-spar
Lane," by Miss Clara Taylor, hung
high as possible; considered, we supp
too pretty to hang on the line in a p
where beauty is so little valued.

The Leicester Gallery.

Mr. Cayley Robinson's series of illus
tions to the "Blue Bird," at the Leice
Gallery, contains many drawings of g
beauty, in his peculiar style. Mr. Ro
son is an artist who must be judged f
the point of view which he adopts, as
illustrator of ideas expressed in a ra
stiff conventional way and with a cer
amount of what may be called stage ef
as in "The Palace of Night" (in wh
Doric architecture is very well treated)
"The Kingdom of the Future," both
which might pass for designs for the
scenes, but very fine and effective as su
and in general he handles architecture
decorative manner with great effect.
there are other qualities besides these;
figure symbolising "Water" is admir
imagined, and in the "Farewell of

ders" the antique ship is a most delicate
of drawing. The collection as a whole
ll of interest. In the adjoining room
series of water-colour drawings by M.
ac, the French artist, in his usual
utely finished and delicate style, in
tration of Hans Andersen's Fairy
s. Some of his fairies are exquisitely
tiful. In the centre of the same room
some cases of silver work and enamel
Mr. Alexander Fisher, including a re-
kable little cup in silver and carved
y, with a lapis lazuli stem, and some
good jewellery and personal orna-
ts—an interesting form of art.

SOCIETIES AND INSTITUTIONS.

MANCHESTER SOCIETY OF ARCHITECTS.

Town-planning in Paris and Vienna.

On November 22nd Mr. P. Abercrombie, of the Liverpool School of Town-planning, gave a lecture on the contrasted development of Paris and Vienna. Speaking of Vienna first, he gave plans showing the development from the old mediæval town which still remains in the centre. He explained how the old line of fortification was adapted to form the Ringstrasse, and how in laying out this street open spaces were arranged opposite to and between their public buildings. With maps of the district, he showed the open belt of country, well wooded and picturesque, which surrounds the town, and which is to be left unbuilt upon for ever. The factories were placed on the south-east of the town; the prevailing north-west wind thus carrying away the smoke.

Turning to Paris, he showed that the Roman roads had formed the basis of the modern town. In all the modern improvements—both those of Napoleon and those of Baron Haussmann, the vista had been the principal motive. In obtaining this the individual buildings were of necessity

WESTMINSTER CATHEDRAL: THE PRESENT CONDITION OF THE INTERIOR.

subservient to the general lines, and in this way Paris had always been more fortunate than Vienna. Mr. Abercrombie had many excellent slides of the buildings and streets.

A discussion followed in which Messrs. Barker, Agate, Worthington, Corbet and others joined.

JUNIOR INSTITUTION OF ENGINEERS.

A number of members of this Institution visited the works of the Tottenham and Edmonton Gas Light and Coke Company, on Saturday afternoon, November 18th. Under the guidance of Mr. A. E. Broadberry, engineer, assisted by members of the staff, they were shown No. 1 retort-house, containing 18 beds of eights, 22 in. by 16 in. through retorts, with regenerative heating—total 144 retorts—which are operated by a Fiddes-Aldridge machine, and the coke is removed by a De Brouwer hot-coke conveyor. A setting of verticals is now on order, and when complete the total capacity of the house will be 3,000,000 ft. per diem; No. 2 retort-house, containing at present 24 beds of tens, 22 in. by 16 in., through retorts, with regenerative heating. The charging and-discharging is effected by De Brouwer's projectors and pushers. The coke arrangements are similar to those of No. 1 house. The total capacity of the house is 3,750,000 ft. per day. The water-gas plant was first put in operation in 1894, when Beckton was the only other works in England using the system. The two original sets have been scrapped, and one larger set (1¼ millions) put in their place. The plant now consists of: Two sets 500,000 ft. each., 1,000,000 cub. ft.; two sets 1,000,000 ft. each, 2,000,000 cub. ft.; one set 1,250,000 ft., 1,250,000 cub. ft. The growth of the output since Mr. Broadberry received chief control in 1899 has been from 575,658,000 to 1,687,811,000 cub. ft in 1910, and clear indications show that this year's output will be at least 1,770,000,000 ft.

At the conclusion of the visit, the members were entertained to tea, and the chairman, Mr. Walter T. Dunn, expressed their appreciation of all that had been done to render the occasion so interesting and enjoyable, Mr. Broadberry responding.

ULSTER SOCIETY OF ARCHITECTS.

An Architect on Reinforced Concrete Construction.

A general meeting of the above Society was held in their rooms, 13, Lombard Street, on last Monday week, Mr. Henry Seaver, vice-president (in the unavoidable absence of the President) in the chair. After the routine business had been disposed of, Mr. W. J. Gilliland, F.R.I.B.A., at the request of the members, expressed at a previous meeting, continued the subject of "Reinforced Concrete," on this occasion with special reference to some novel forms of construction designed by him. An interesting discussion ensued, in which the following took part:—Messrs. J. J. McDonnell, T. Houston, James Ferguson, W. C. Maxwell, and the Chairman (Mr. Seaver). There was a general agreement expressed by these gentlemen that the advantages in point of simplicity of construction, economy of labour, and efficiency at a low cost was attained by the methods of construction described.

THE LAW AND THE BUILDER.

At the Temperance Institute, Newcastle, last week, Mr. J. Wightman Douglas gave a lecture before the members of the Newcastle and District Clerks of Works and Builders' Foremen's Association on the subject of the "Legal Position of the Builder as regards Fixtures and Dilapidations." He dealt largely with the question of legislation in respect of dilapidations. In regard to owners of ground rents who had in the past permitted buildings to be put up which had to be maintained for a certain number of years, but which were of such a character that they would never last that period, he pointed out that, as legislation both in regard to the Agricultural Holdings Act and the Town Planning Act had rather a tendency to place repairs more upon the owners than upon the holders of the reversionary interests, it was just possible that the ground rent owners of leasehold property might suffer.

As regards furnished houses where the landlord lived on the premises, there was no redress for the tenant if the house was unsuitable. Where, however, the landlord or landlady did not reside on the premises, the tenant had power to terminate the tenancy, provided it could be proved at the commencement of the tenancy that it was not suitable for habitation through bugs, vermin, or defective drains. He went on to point out that it was most essential that persons signing agreements should notice that the word "out-going" was not included in the covenant of repair, or any clause inserted by which they could be made responsible for making roads, drains, or other work done by local authorities.

With respect to fixtures, it was most essential that they should be removed before the tenant left the tenancy; otherwise the tenant ought to get permission under seal to return for the purpose of removing the fixtures, for a written permission was of no value.

FEDERATION NEWS.

Birmingham Building Trades Employers' Association.

The report of the executive council of this association for the year ending October 31st fills an 18-page pamphlet, from which the following particulars are extracted:—

State of Trade.—During the early part of the past year there was a slight improvement in the condition of the building trade, but this has not been maintained.

Working Rules.—Carpenters and Joiners.—The appeal of the Carpenters and Joiners for an increase of one half-penny per hour in their rate of wages was further considered, and at the meeting of the Local Board held in September the advance was conceded, to take effect from Dec. 2nd, 1911, subject to certain alterations in the working rules with regard to the ordinary working hours, overtime, and walking time. These alterations are more particularly referred to in the report, but the details need not be given here. Bricklayers.—At the meeting of the Local Conciliation Board, held in September, the rate of wages of the bricklayers was advanced by one half-penny per hour, to take effect from February 3rd, 1912, subject to the same alteration in the working rules as in the case of the carpenters. Labourers.—At the same meeting the rates of wages of builders' labourers and leading scaffolders were advanced by one half-penny per hour to take effect from February 3rd, 1912, subject to the same alterations in the working rules as in the case of the Carpenters and Bricklayers

Membership.—At the end of last year the number of members of the association was 179 as compared with 140 at the end of the previous year. The number is now 205.

Sub-Contracts.—During the year the Council have had under consideration the question of the form of sub-contracts, with special reference to the periodical or other payments to be made by the principal contractor, and the responsibility of sub-contractors for defective work. The matter is still under consideration.

Outside Contractors.—In the early part of year the council decided that outside firms of tractors doing work in Birmingham should qualified for election as temporary members of association on payment of a subscription of £1 per annum.

Local Conciliation Board—Labourers' Represe tion.—Some months ago a letter was received f the National Union of Gas Workers and Gene Labourers, complaining that they had no repres tative on the Local Conciliation Board. Su quently it was decided to admit this section of labourers, and to allot them two representati subject to the condition that such representati should actually be working as builders' laboure

Schedule of Day Work Prices.—Owing to the creases of wages granted to certain branches of operatives, and to alterations in the cost materials, it has become necessary to revise association's schedule of day-work prices, and council have instructed the sub-committee to sider the matter and bring up recommendations the necessary revision of the schedule.

Contracts.—Bills of Quantities.—It is part of policy of the association to decline to tender contracts over £500 in value unless bills of qua ties are provided. Three such cases occur during the year, and in each instance a circu was issued to members calling their attention the rule on the matter. Letters were also addres to the architects concerned. In one case the ar tect withdrew his invitation for tenders, and a preparing quantities issued a fresh invitation. another case the architect declined to proceed cause the proprietor insisted on there being quantities. In the third case the extraordin requirement was made that each contractor sho pay 1½ guineas for a set of quantities—wh apparently he was to forfeit if his tender was successful.

City Corporation Contracts.—The sub-commi of the Council has on several occasions had un consideration the question of conditions inserte contracts required to be entered into with var departments of the Birmingham Corporat Among these conditions to which objection is ta are the following:—(1) An arbitration clause wh makes the decision of the architect or engineer f and conclusive; (2) the manner of ascertaining amount of the extras or omissions, and the decision which is given to the architect or gineer; (3) the indefinite use which may be mad contractor's scaffolding and plant; (4) the res tion of the periodical payments to the contracto work "actually executed," regardless of the v of materials, etc., brought on to the site; (5) indefinite liabilities of the contractor in regar royalties on patents. The president of the assoc tion is Mr. Ralph Webb, and the secretary G. Henry Wright, F.C.I.S., Winchester House, toria Square, Birmingham

The annual dinner of the Birmingham Buil Trades Employers' Association was held at Grand Hotel, on November 21st, Mr. Will Moffat presiding.

The toast of "The Birmingham Building Tr Employers' Association and the Trades of the C was proposed by Mr. Ebenezer Parkes, M.P., referring to subjects mentioned in the annual port of the association, commended the princip conciliation and arbitration as against strike trade disputes. Speaking of the state of the bu ing trade, Mr. Parkes said it had been atte by a series of years of depression, and that see to be the chronic state of the trade. In cons tion with business men, he found that they m less profits. They had to do perhaps twice as m business to earn the profits they earned years That was partly due to competition, but it was to a great extent to the increased burdens put manufacturers in recent years. There were burdens of rates and taxes, of Acts of Parliam and of new schemes which it was said were for benefit of the working class. In a reference to Insurance Bill, Mr. Parkes said builders were be saddled with the double burden of insuranc sickness and also unemployment.

The president (Mr. William Moffat), in reply pressed himself as being apprehensive of the ef of the Insurance Bill on the trade, and, spea of the conciliation scheme regulating building t disputes, said it had brought them the sever years' peace, but there seemed to be a rather t time in front. There was a generation arisin the Conciliation Boards "who knew not Jose It might mean another series of strikes and outs before the cycle of peace came round ag But he wanted to make sure that the membe the association, as far as they could, should do anything to disturb the working of the bo before they had run their full period.

Lieutenant-Colonel J. Barnsley, V.D., in mitting the toast of "The Architects and veyors," said that after a period of florid arch ture they had come to architects who had back to simpler and more domestic tastes, wh the proper use of good, honest bricks and mo and stone and timber, were made to play a minent part. Vast opportunities were openin to them in the extension and development of mingham. By the very nature of their em ment they must play an important part in development and extension. He would sugge them the thought of added responsibility, for wanted Birmingham to be not only big but gre the very best sense of the term. The thought o larger area and population of the extended suggested that the best results should be sought and the very highest ideas cherished.

Mr. C. E. Bateman, President of the Birming Architectural Association, and Mr. Anthony R responded.

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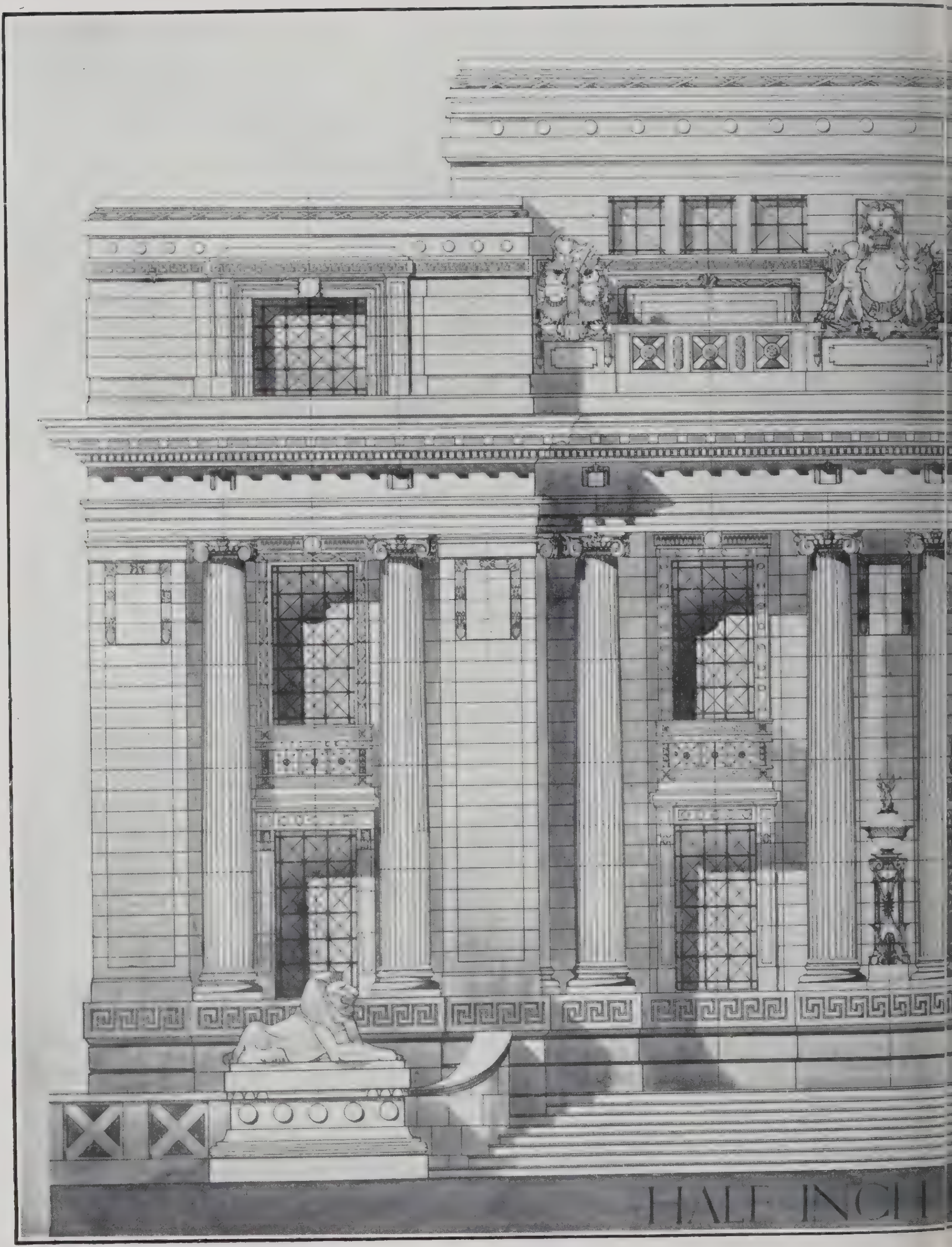
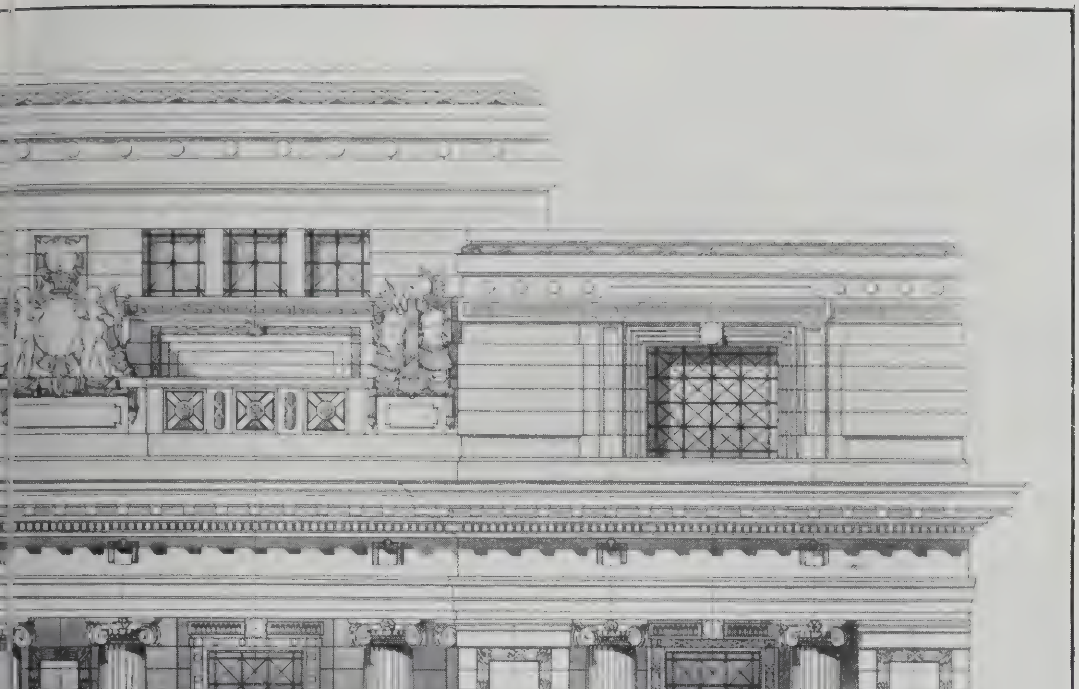
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, December 6th*, 1911.



DETAIL OF FIRST-PREMIATED DESIGN FOR NEW MUNICIPA



ONE, LONDON. T. EDWIN COOPER, F.R.I.B.A., ARCHITECT.

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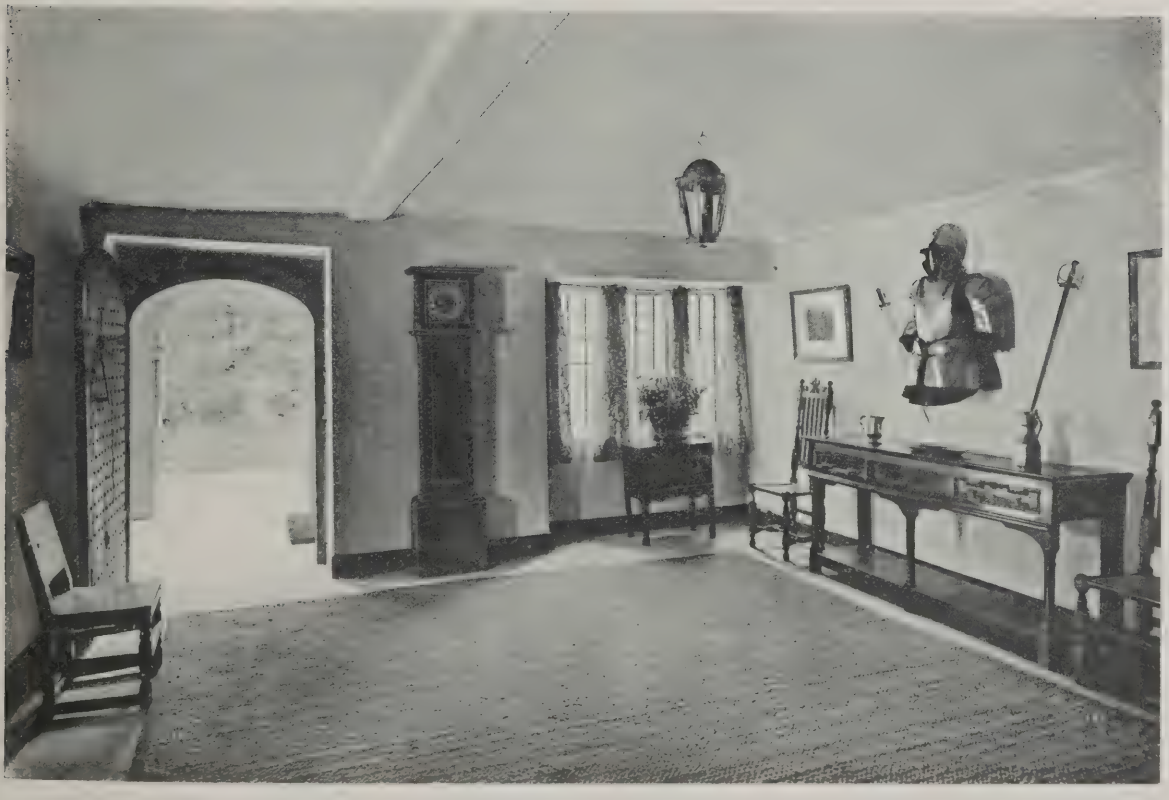
THE ARCHITECTS' & BUILDERS' JOURNAL.

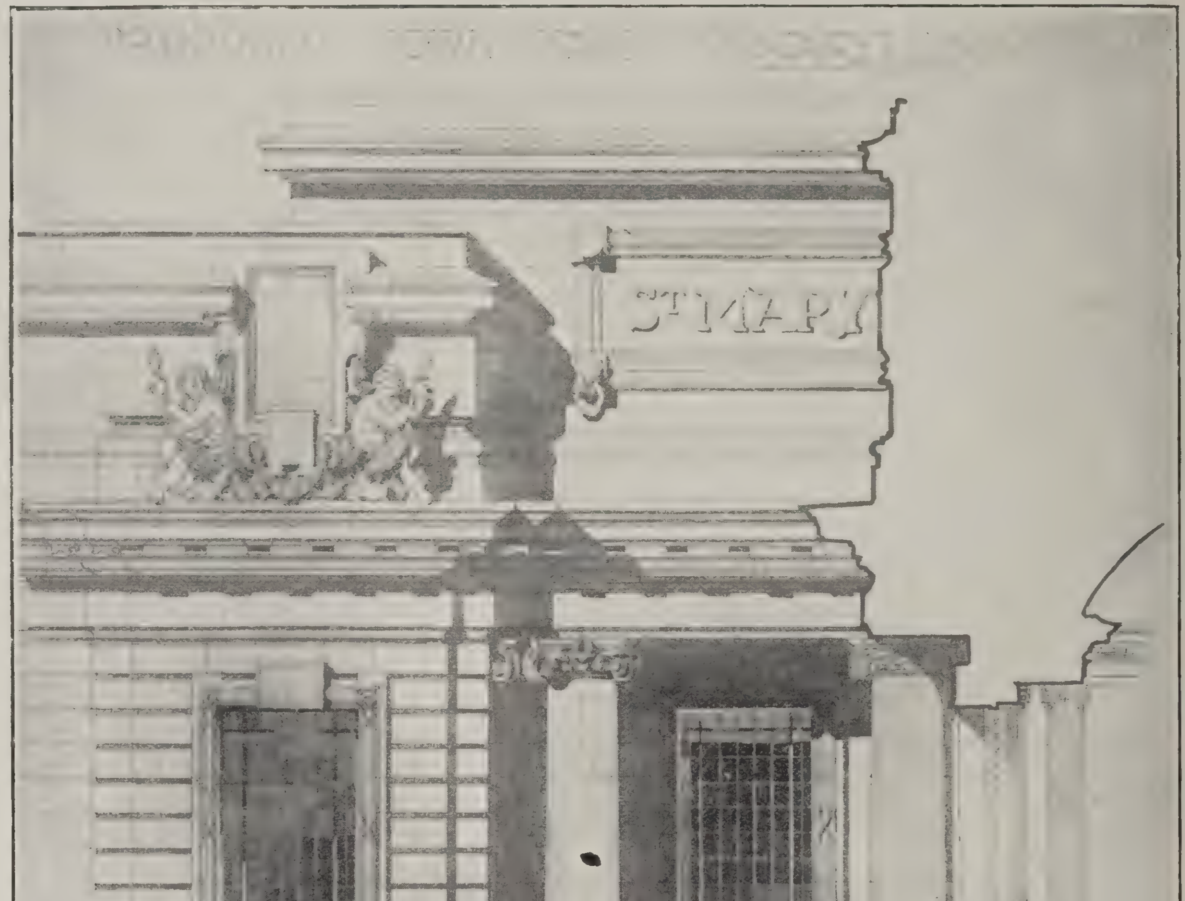
WEDNESDAY, DECEMBER 6th, 1911.

Volume XXXIV. No. 880.



ENTRANCE HALL, FRITWELL MANOR, OXFORDSHIRE.

(See page 395.)



DETAIL OF SECOND PREMIATED DESIGN. THOMAS WALLIS AND J. A. ECWDEN, ARCHITECTS.

THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 6th, 1911. CAXTON HOUSE, WESTMINSTER. VOLUME 34. No. 880.

NOTE : The List of Contents will be found on page IV. of the front advertisements.

The Marylebone Town Hall Competition.

THE competition for a new Town Hall for Marylebone has been a very well-conducted one, with some features about it which may be well accepted as examples. The Council, in appointing an assessor, have undertaken to abide by his decision. They have been content with general drawings to 1-16 in.
e, with a $\frac{1}{2}$ in. scale detail elevation ; they have declined to
e any precise limit of cost, contenting themselves with say-
that they want "a well-designed and dignified building"
sistent with "reasonable economy," and have merely re-
ed competitors to state the estimated cost at 1s. 2d. per
foot (to include drainage, heating, and lighting) ; but if
author of a design thinks this rate insufficient to carry out
design, he must state what rate he thinks adequate. As far
ve observed, every competitor has accepted the rate of cost
gested. This statement of estimated cost is all that is
uired beyond the drawings, the usual report or description
ng dispensed with ; an advantage to all concerned. No one
time to read the reports, unless the Assessor may consult
e of the designs he thinks of selecting; they are an addi-
al tax on the competitor without probably any advantage
im or to the promoters. What is wanted in a competition
he plan and design, not the author's setting forth of its
its, which is what the Report usually amounts to.

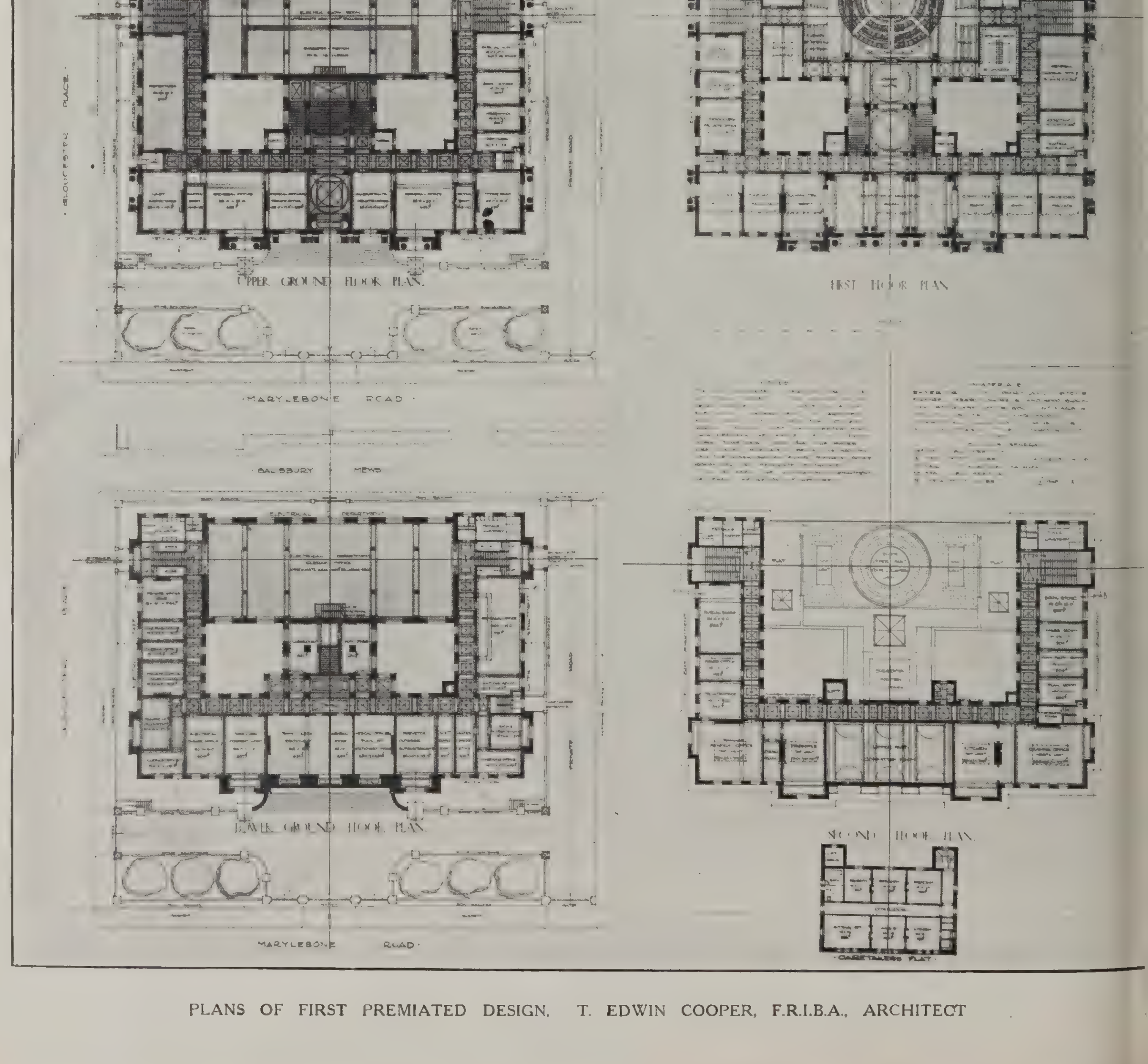
hese favourable conditions, coupled with the appointment
Mr. H. T. Hare, one of the most capable assessors in regard
Town Hall competition, have led to a large competition,
e than 180 designs having been sent in, which were on
v last week at the Marylebone Baths. With an attention
onvenience of inspection not always shown in such cases,
four premiated designs were hung together in order, with
r numbers in order of merit chalked on the floor under them,
hat one was not left to hunt for them all over the room, as
ften the case. A general survey of the designs leaves one
the impression, how much easier it is, in the case of a
ge and complicated building, to produce a good elevation
n a good plan. There are a good many very pleasing eleva-
ns, and the majority of the detail elevations are fine draw-
s; but there are perhaps not more than a dozen plans in
room which do not, at a glance, reveal radical defects in
idea and system (or want of system) of the plan. It seems
often that competing architects for a Town Hall do not
lise the actual facts of the working of such an establish-
nt. For instance, it is essential that the Mayor's and the
wn Clerk's private rooms should be near or close to each
er ; they have often to confer together ; yet we find, in some
what are in other respects the best laid-out plans, the Mayor
l the Town Clerk at opposite angles of the building, as far
m each other as they can be got. Then, in the Council
mber there must be a place for reporters ; it is marked on
st of the plans, but if reporters are to be there they must
e some way of getting in, other than entering by what may
called the state entrances, by the Councillors' ante-room,
ch neither reporters nor Councillors would like. This seems a matter of mere common sense, yet there are a good many architects who cannot see it.

The new building is to stand on the south side of Marylebone Road, at the angle with Gloucester Place, and therefore faces north ; the principal entrance to be in Marylebone Road, with a subsidiary entrance or entrances in Gloucester Place. Among the special requirements are these: The showroom of the Electrical department is to be on the ground floor, "with a separate entrance from Gloucester Place," which means, of course, an entrance to it alone ; of five Committee Rooms, the large one and two smaller ones are to be capable of being placed *en suite* for receptions, which of course means the first floor, along with the Mayor's room and the Council Chamber ; the Town Clerk's private office (naturally) on the same floor. Most of the competitors have ranged the three principal Committee Rooms along the main front, which is the best and most natural arrangement for interior grouping ; it has the disadvantage, however, that the rooms are exposed to the noise of the main road traffic, a dilemma which can hardly be avoided. The Town Clerk's general office is required by the instructions to be either on the first floor "or may be on the second floor" ; a fatal error. We have always been of opinion that the Town Clerk's general office, which is the main medium of communication between the Corporation and the public, should be the first and most obvious room seen on entering the building ; it should be impossible to miss it ; to send people two floors up, hunting for it, is absurd. It should be on the ground floor under the Town Clerk's private offices, with a private stair of communication or (better) an electric lift which can be actuated by the clerks. Competitors are required to show the laying out of the fore-court in front of the building, but nothing special has been made of this in most cases. It could not of course fairly come under the "estimated cost of the building."

The first premiated design, by Mr. Edwin Cooper, shows a symmetrically arranged plan with a spacious and effective main staircase axial with the central entrance ; the Council Chamber at the back, and the three principal Committee Rooms in front and axial with the Council Chamber approaches, making a dignified suite of rooms and vestibule. The electrical show-room is at the back (where most competitors have placed it), but the entrance to it does not fulfil the obvious intention of the instructions, as it is an entrance to a general corridor, with the show-room entrance on the opposite side of the corridor ; this entrance from Gloucester Place would in fact be the shortest way of access to the Town Clerk's office, which is near the top of this staircase and also conveniently near the Council Chamber, but a long way from the principal entrance and main staircase. The importance of this depends, of course, on whether the main staircase is to be used for the daily business of the building, or is only for the higher officials and for use at receptions ; but to label the south-east entrance as "entrance to electrical department, etc.," is rather an evasion of the requirement of a separate entrance to the show-room, as in fact the chief uses of this entrance would come under the "etc." The public gallery in the Council Chamber should have had a separate staircase from the street, instead of merely a lobby out of one of the main corridors. The elevation of the front is a good one in the manner of treatment now in vogue ; a long level building with a heavy blocking-course above the cornice; the windows very plainly treated; the centre portion slightly recessed with a row of free-standing columns in front of the wall. The general elevation is one of the best, and the detail elevation unquestionably the most powerful and effective drawing in the room, and the details very good, but we can hardly consider the plan of the best. A lofty tower is proposed, apparently (for it is only shown in one elevation) over the main staircase, but there are no piers shown there adequate to carry such a tower. The estimate, exclusive of the tower (which is evidently intended only as a suggestion), is £57,653; but that building will hardly be carried out at 1s. 2d. a cubic foot.

The second premiated design, by Messrs. Wallis and Bowden, shows, like the first, a columned centre between plain wings, but in a rather lighter manner; the windows, square-headed above and round-arched below, well treated and combined; the detail elevation a good piece of drawing and design tinted in an artistic manner. The Council Chamber is at the back (as in most of the plans); the Mayor's parlour and

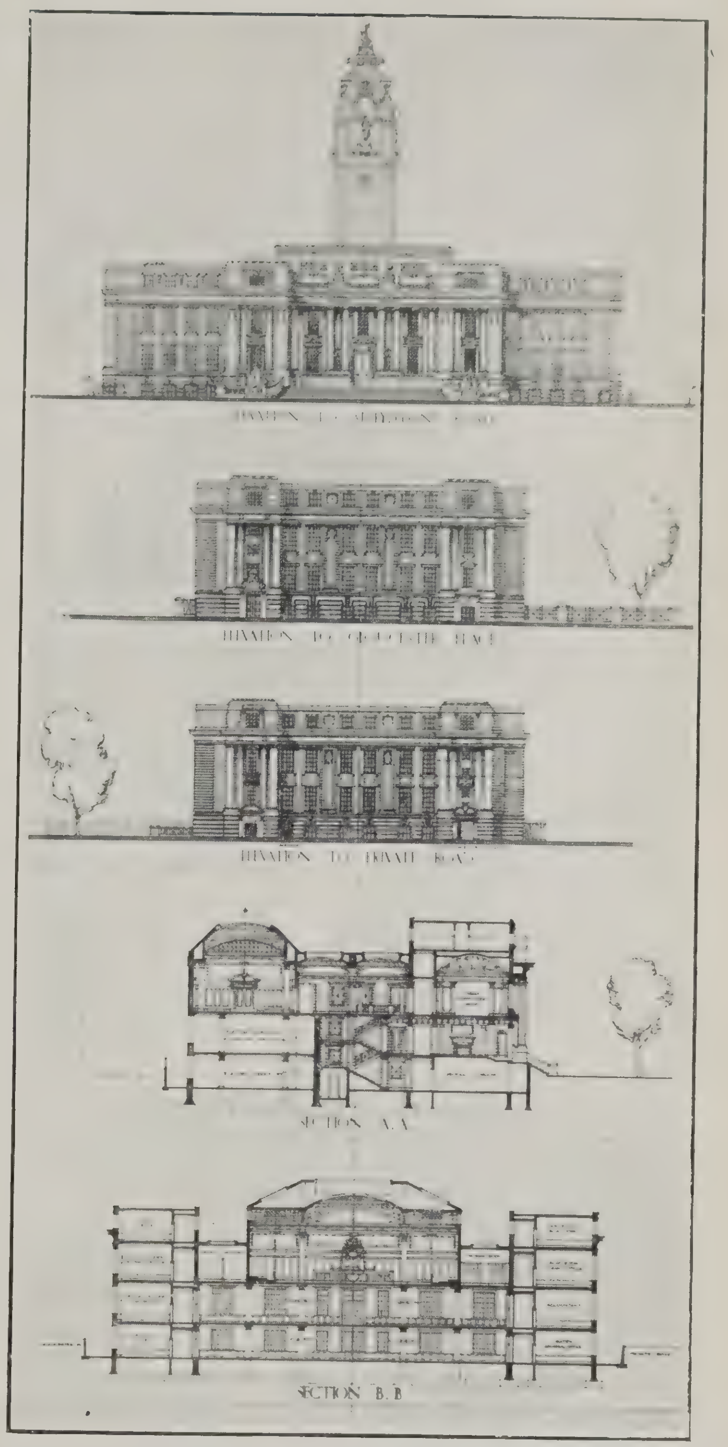
Committee Rooms are *en suite* all along the front, and
Town Clerk's private office close to the Mayor's parlour
it should be. The ante-room and approaches to the Co
Chamber are well and effectively planned; the main stair
with a small dome over, seems rather cramped in proporti
Among minor good points in the plan are, the Staff corr
on the ground floor, the arrangement of the prin
lavatories as a block with a small open court on each sid
system often employed now), and the provision of a sepa
entry from the street to the electrical showroom. The esti
is £69,350, which is a reasonable one for the build
Messrs. North and Robin, in the third premiated design, p
the Council Chamber at the back as usual, but as a parall
gram at right angles to the main axis of the building, the
objection to which is that it is not so architecturally effe
as placing the centre point of the Council Chamber on
central axis. The room would be a very effective one arch
turally, with its four groups of coupled columns formi
square with a domical ceiling over them; but it would be
acoustically, and the position of the reporters, within tw



PLANS OF FIRST PREMIATED DESIGN. T. EDWIN COOPER, F.R.I.B.A., ARCHITECT he quasi-recesses formed by the columns, would mean that he columns would shut them off from seeing (and therefore rom properly hearing) a considerable proportion of the peakers. The authors have placed the Mayor's room coneniently close to the Council Chamber, but they do not realise hat it is even more important that he should be conveniently lose to the Town Clerk, who is far away at the north-west ngle of the building. The Town Clerk's general office is onspicuous at the end of a corridor, reached by the west econdary staircase. The plan shows both the electricity ow-room and the public gallery of the Council Chamber ith entrances properly arranged direct from the street. The levation shows a centre and end pavilions with pediments, nd angle columns within heavily rusticated piers according a scheme familiar in modern architecture, and effective ough in a monumental sense, though perhaps one gets a little red of it; but the elevation as a whole does not hang together ry well. The architects' estimate is £56,952; below the ark, we think.

The fourth premiated design, by Messrs. Warwick and all, is not architecturally up to what we should have expected om them. There is a long row of detached columns along e front, stopped at each end by a very feebly designed avilion, and an immense hipped roof crowning the whole in e line from end to end (except for a leaded lantern, that rises om the middle of it), without taking any account of the chitectural divisions of the elevation. This is treating a wn hall like a villa; it wants dignity altogether. The plan rather a fine one; there is a large square central hall with a aircase symmetrically on each side of it, a large ante-room ial behind it, with the Council Chamber (south-east angle) ening to the right out of it, and a very spacious cloakroom the left; but this very liberal provision for the show portion the building takes up rather a disproportionate space from e offices. The Town Clerk is at the east side of the building, e Mayor's room at the north-west angle, inconveniently far ; the Town Clerk's general office door is conspicuous at the d of the east corridor, but if the east entrance is the one r access to the office, the public, after mounting the stairs, ould have to march the whole length of the east corridor e entire depth of the building) to reach it. The public llery (Council Chamber) has a staircase from the street, t the separate street entry to the electrical showroom is not pplied. There is a great deal of merit in the plan as a ole, however, though we certainly think the elevation weak. mpetition estimates are mysterious things. This design is timated at £69,255, which is probably about right; the third sign is estimated at £56,952, yet a glance at the drawings enough to show that it is the more costly scheme of the o.

Among the numerous other designs it is only possible to ntion a few of the best, some of which are exceedingly od. One of the best is Mr. J. B. Fulton's, showing a fine vation with a central open cupola; the Council Chamber d approaches well planned, only for the want of a subliary entrance for the reporters (this might easily have been de off the staircase to the public gallery, which is only ided off by a thin partition wall); the Mayor's and Town rk's rooms are put conveniently next each other, at the rth-east angle, and the centre entrance in the Gloucester ace front is so managed that the staircase lands people on first floor immediately facing the Town Clerk's general ce, so that they need never have to enquire for it. The n has the merit of securing unbroken corridor communican all round on the ground floor, a most desirable result, ficult to attain in a large and complicated plan. This would a costly building; it is priced at £72,190, and would bably come to more; but it is a most meritorious plan; elevation might be thought a little pretentious, but really ood many of the elevations rather err in the other direction, l are too heavy and deficient in architectural effectiveness.



NEW MUNICIPAL BUILDINGS, MARYLEBONE.
ELEVATIONS AND SECTIONS OF FIRST PREMIATED DESIGN.
T. EDWIN COOPER, F.R.I.B.A., ARCHITECT.

Sir Brumwell Thomas's design shows a carefully considered elevation in the more heavy and monumental style which characterises most of the best elevations, but relieved by a cupola marking the central vestibule. This is a thoroughly good axial plan; the staircase hall would be very effective; in the Council Chamber the need for a subsidiary entrance is not forgotten, and the approach to the Town Clerk's general office is as direct as in Mr. Fulton's plan. This would be a costly design; it is estimated at £64,405, and we do not think that would cover it. It is marked as "commended by the Assessor," and might well be; our own impression is that this and the last-mentioned design (Mr. Fulton's) are superior to any of the premiated ones.

Messrs. Lanchester and Rickards have a design of much merit, with some special points of treatment. The main entrance in Marylebone Road is not central, as with most of the others, but towards the west end of the front, the entrance vestibule leading to a square hall from which the Council Chamber staircase leads up to the left (at right angles to the entrance axis), and an "office staircase" to the right. This is an ingenious treatment, which makes the main entrance and the hall serve for both the state and the business approach to the first floor; the only objection to it is that a turn at right angles to the principal staircase is not so dignified in effect as an approach which preserves its central axis all the way; but it is a clever point in planning. The Council Chamber in this plan is, from the method of approach, necessarily at the east end of the plan, to which there is no practical objection. There is a separate staircase from the street to the public gallery, cleverly got in at the south-east angle of the building; and the Town Clerk's waiting and enquiry offices are conspicuously placed close to the top of the office stairs. The Mayor's room is at the north-east angle of the front, the Town Clerk's at the north-west, connected by the Committee Room corridor; though this is not so close as might be convenient, there is a symbolical fitness in placing the two principal officials in symmetrically disposed rooms at the two angles of the front, and the corridor which connects them, opening only on committee rooms, is practically an official and not a public corridor. The elevation is rather a peculiar one, consisting of three identical pavilions repeated with differently treated surfaces interposed between them, so that neither the centre nor the ends are emphasised, which looks a little monotonous, but it is well treated in detail. The estimate is £79,450, which seems much more adequate than some of the estimated prices.

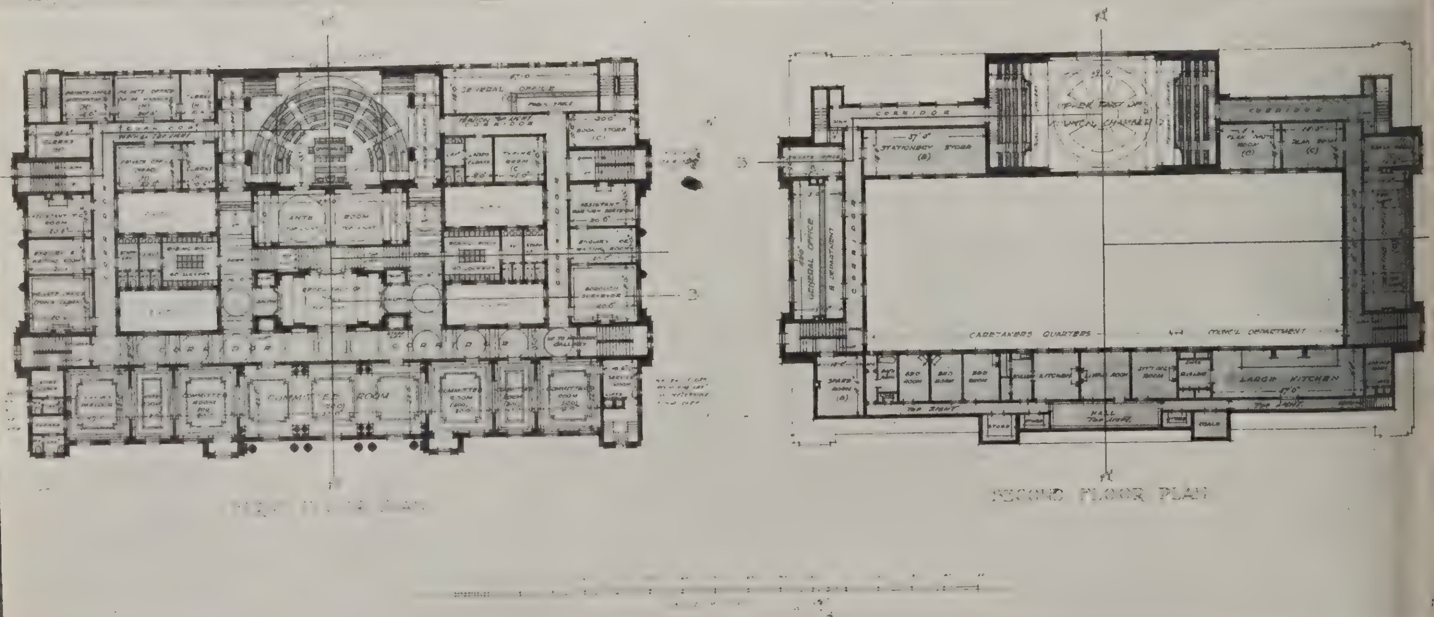
Messrs. Clyde Young and East show a very good elevation and a very symmetrical-looking plan, which however is open to objection in one or two points; the "ante-room" to the Council Chamber is in reality only the centre portion of a corridor running along the front block and slightly marked off by architectural divisions, so that it becomes a passage-way from one part of the corridor to the other, whereas it should only be a passage way to the Council Chamber; and the medical department offices have windows only on to a rather small central court, which is not hygienic. A small court should only be used to light corridors of passage, not rooms for daily occupation. The cost is estimated at £57,500; under the mark, we should say. This is one of the designs commended by the Assessor.

Mr. A. W. S. Cross, in a very good plan, adopts the same method as Messrs. Lanchester and Rickards, of placing the Town Clerk's and Mayor's rooms at opposite ends of a committee corridor; the approach to the Council Chamber is well planned, and a subsidiary entrance to it is provided. The elevation is effective and rather grandiose in character, with a columned centre and a lofty tower rising behind, the basement of which forms a muniment room in the safest place, the centre of the building. There is an exceedingly good detail elevation. The estimated cost is £72,170, apparently including the tower; at least, we did not notice any statement to the contrary.

Mr. W. Flockhart, in his plan, keeps the main staircase close up to the front, landing with good effect opposite to a colonnaded entrance to the ante-room; the disadvantage is that the central position for the large Committee Room, when they are thrown *en suite*, is lost. The Council Chamber is a square domed apartment, so arranged, however, in regard to seating, that the central door from the ante-room opens on the side and not the axis of the Council Chamber; this may perhaps be more convenient for the general use of the room, but would have a one-sided effect when the rooms were used *en suite* for entertainments. The elevation was hung in a bad light, but looks well as far as one could see it.

Mr. R. Atkinson's plan has some special points in it. The Council Chamber is a semi-circular room at the back, the straight side coinciding with the south wall of the building; there is a concentric corridor round the outside of the curve. The Mayor's and Town Clerk's rooms are placed close together on the south side, and near the Council Chamber, and the author has appreciated the utility of having one committee room close to an opening out of the Council Chamber, which may often be a convenience when some point has to be briefly considered by a committee during a sitting of the Council; this is the only plan in which we noticed such a provision. But there is no way for reporters to get in except through one of the Council departments.

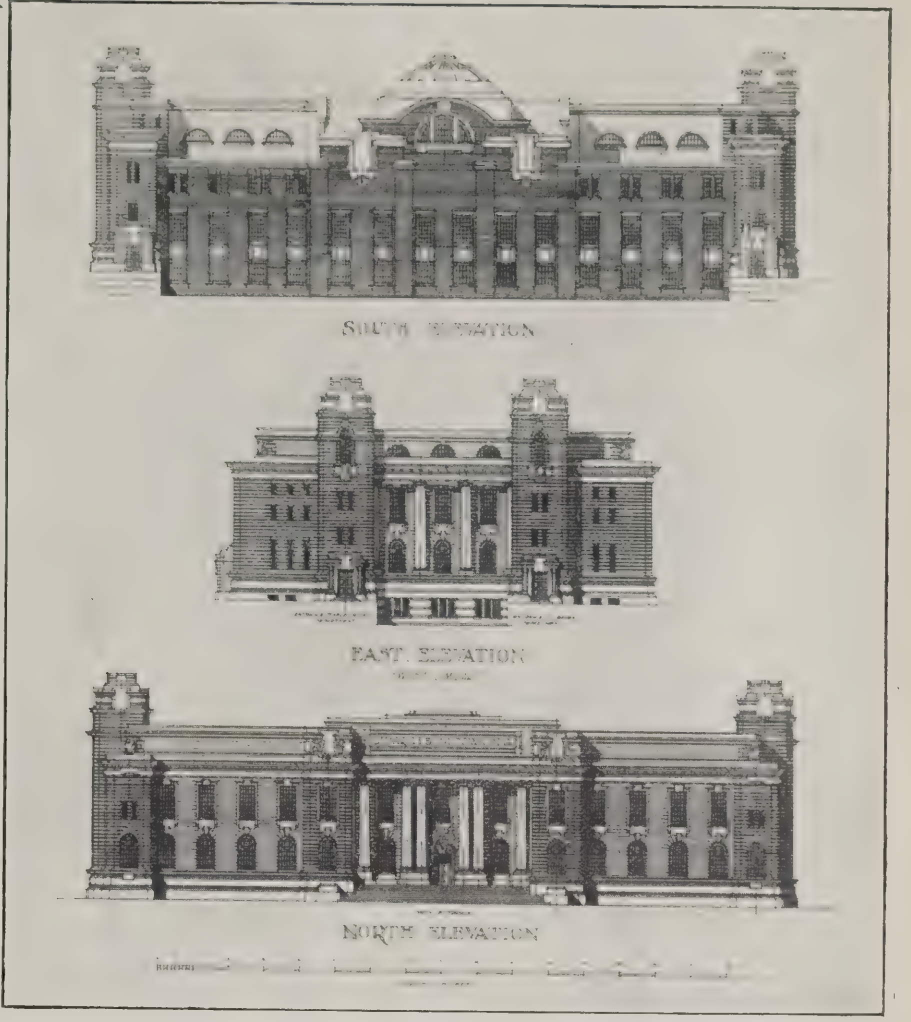
Among the few others which we can briefly notice, Mr. Adshead has a very pleasing long low elevation; coupled columns along the centre portion, stopped by pedimented pavilions at each end. The Mayor's and Town Clerk's rooms are in convenient proximity, with a small ante-room between them. The treatment of the detail elevation is very refined. Mr. Louis Ambler shows a good front elevation; Mr. Curtis Green one which is very quiet and in excellent taste, but almost *too* unassuming for a Town Hall, which should have a certain



NEW MUNICIPAL BUILDINGS, MARYLEBONE: PLANS OF SECOND PREMIATED DESIGN.
THOMAS WALLIS AND J. A. BOWDEN, ARCHITECTS.

chitectural dignity; the plan is convenient a general way, but there are two es of approach to the ante-room and ouncil Chamber, which is not the most effec- e way of planning. Messrs. Wills and nderson's elevation is diversified by two grace- l cupolas, which are an agreeable relief to e eye after seeing so many straight skylines; e Town Clerk and Mayor are conveniently aced, but the approaches to the Council amber seem (for effect) rather cramped. Mr. rlette spends a good deal of space in his large lumned ante-room and reception hall, though doubt their value would be felt on entertain- ent nights. He adopts the symmetrical method placing Mayor and Town Clerk at opposite gles of the front; the elevation is picturesque it rather too much cut up, without any obvious tive. Mr. F. G. Troup has what is in many spects a good plan, or a plan with good ints, especially as to the approaches to the ouncil Chamber; the elevation is hardly fficiently municipal in character. There are e or two other designs which as elevations are ceedingly original, picturesque, and interest- g, but which are attached to plans that are rfectly hopeless. It is unfortunate that some chitects of really artistic feeling seem never to ve even considered the rudiments of planning.

It is rather melancholy to see so much work sted in competition for a single building, but is has at all events been a perfectly fairly con- cted competition; and though we cannot quite el that the best four have been premiated, it is only a difference of judgment, and we ke no doubt that Mr. Hare has conscientiously ne his best in what must have been a suffi- ntly arduous and complicated task.



NEW MUNICIPAL BUILDINGS, MARYLEBONE: ELEVATIONS OF SECOND PREMIATED DESIGN. THOMAS WALLIS AND J. A. BOWDEN ARCHITECTS.

The Rejuvenation of Paris.

ALL goes well, apparently, with the great scheme for clearing away the frowning fortresses and ugly barracks that disfigure the confines of Paris, and for the pro- ion, in their stead, of pleasant parks and open spaces. e commissioners appointed to deal with the matter, having nsidered the reports that have been drawn up by the Ministers Finance and of War, have agreed to adopt, in its broad out- es, the project of M. Dausset, which seems to have satisfied the interests concerned—those of the State, which will ure a fair price for the property, and will retain power perform such work as may be deemed necessary by the litary authorities; those of the reformers, whose chief object to render Paris more beautiful and more healthy; those of private owners, who are assured of a fair recompense for turbance, and a due regard for all their rights; and those the general public, who will enjoy these further amenities hout suffering any increase in the burden of taxation. The y purchases the fortifications in one lot from the State, but l pay for them in easy instalments, and will recoup itself, we understand the matter, by selling the properties it does want. The Parisians have therefore every reason to gratulate themselves, as they are doing, on the disappear- e of "those frightful barracks and *roulottes* which dis- our the approaches to the capital," and on the acquisition "delicious promenades, where when the heat of the dog- s descends, they will find fresh air and grateful shade. re than five hundred hectares, thus transformed, will give Paris a fresh accession of youth and beauty." The com- sion, having agreed upon the scheme in principle, has been ided into three sub-commissions, each charged with the y of studying particular phases of the scheme, and the ilts of their labours will be digested for presentation to Parliament. Of these sub-commissions, the respective presidents are MM. Felix Roussel, Chérioux, and Dausset, and they will receive assistance from M. Bonnier, Director of Architectural Services of the City of Paris. It is confidently anticipated that the work will be pressed forward with rapidity, and that in the result, Paris, ere long, will again have vindicated her claim to be considered the finest city in Europe.

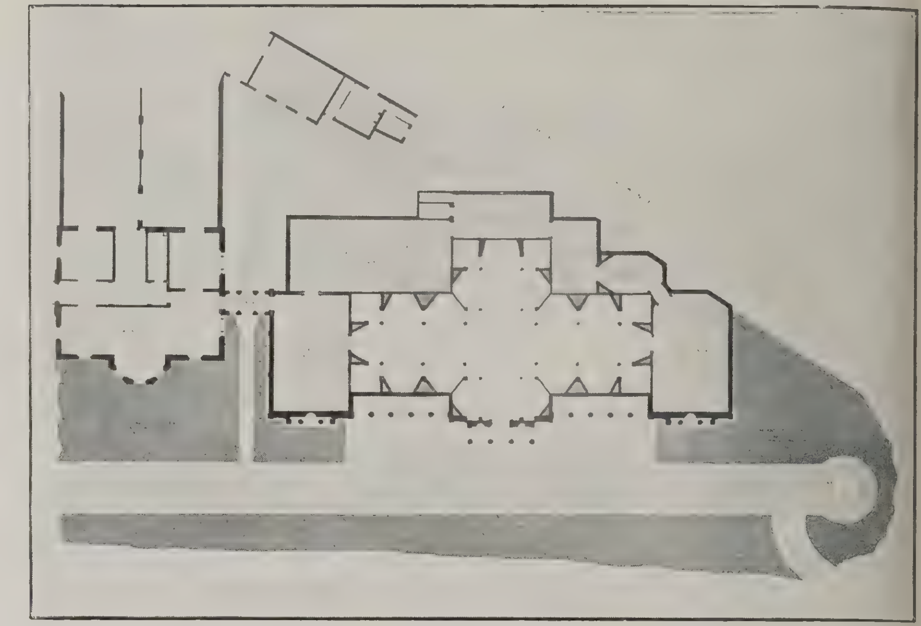
Who Invented Portland Cement?

WE observe with regret the announcement of the death of Mr. Isaac C. Johnson, of Gravesend. When Mr. Johnson, who died on Thursday last, celebrated his 100th birthday last January, the King sent him a congratulatory message. In the announcements of his death, and in earlier references to his remarkable career, it has been repeatedly claimed for him (although we are not aware that he ever advanced the claim himself) that he was "the inventor of Portland cement." This statement, while it might possibly be defended on the ground that Mr. Johnson was a pioneer in the industry, and among the first to effect improvements which put the product upon a commercial basis, seems to ignore the fact that the actual "discovery" of the material is credibly attributed to one Aspden or Aspdin. But, at all events, seeing how universal and, it may almost be said, how indispensable, is the use of Portland cement to-day, it is little short of astonishing to reflect that the invention of the material, substantially as we know it (for of course some sorts of natural cement were of prehistoric origin), could be attributed without anachronism to a man who only last week was living among us. But even more astonishing are the improvements in the manufacture, which within the past decade or so have produced a material that, thanks as much to chemical research as to mechanical ingenuity, is well-nigh perfect.

THE LIGHTING OF PICTURE GALLERIES.

Arising out of our recent article on the question of the lighting of the National Gallery, Mr. Gibbs, of Sheffield, sends us the illustrations which we reproduce of the Mappin Art Gallery at Sheffield, of which Messrs. Flockton and Gibbs were the architects, and in which a special system was adopted to provide for the adequate lighting of the pictures, after evidently a good deal of thought and consideration. The building is not a new one; it was erected, if we remember rightly, a good many years ago; but to those who have not visited it, and who are interested in the subject of picture galleries, it may be worth while to publish the illustrations of it, and the description furnished by Mr. Gibbs is only by way of a further ventilation of the subject, which may give rise to remarks or information from others who have had experience, or who have theories, as to the lighting of picture galleries.

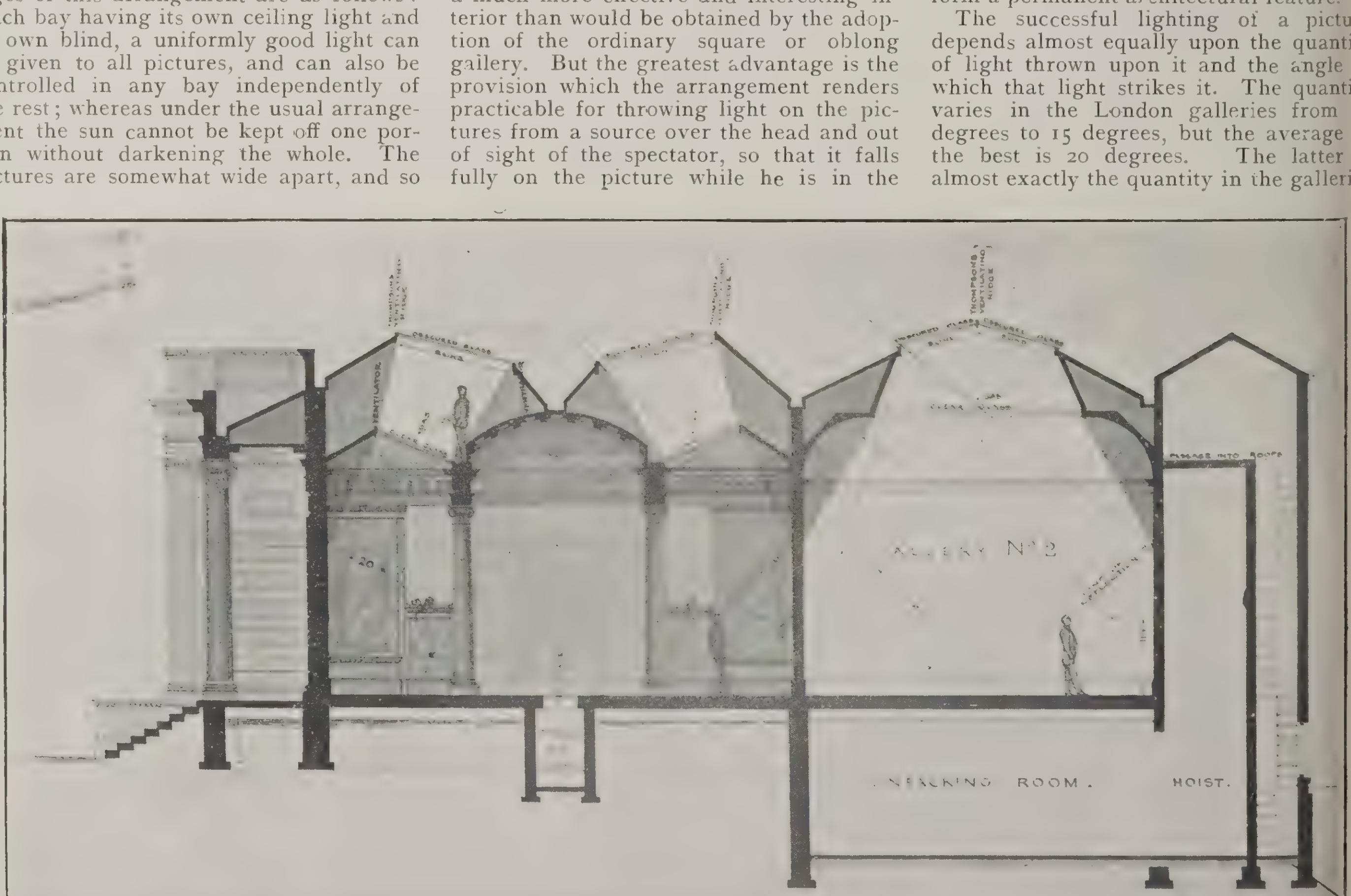
The following is Mr. Gibbs's description of the objects kept in view in planning the Mappin Art Gallery in 1884, and the means adopted to realise them.



PLAN OF THE MAPPIN ART GALLERY, SHEFFIELD, AS ORIGINALLY DESIGNED.

In preparing the design the chief consideration was naturally how best to arrange for the display of the Mappin collection of pictures, both as regards the lighting and the general disposal of them; and it was considered that as the number and respective sizes of the pictures were fixed, these could be provided for in the most satisfactory manner by a departure from the ordinary provision of four bare walls on which to hang them, with a common central light, and adopting instead a series of bays or recesses, each with its separate ceiling light, and each containing a selection from the collection arranged on both sides of the central hall. The advantages of this arrangement are as follows: Each bay having its own ceiling light and its own blind, a uniformly good light can be given to all pictures, and can also be controlled in any bay independently of the rest; whereas under the usual arrangement the sun cannot be kept off one portion without darkening the whole. The pictures are somewhat wide apart, and so the distraction caused by a view of so many side by side on the four walls of an ordinary gallery is avoided, and opportunity given for quiet study and enjoyment of them. This is facilitated by the fact that the hall along which visitors have to pass is behind the seated spectator. The arrangement for an advantageous close inspection of the pictures does not interfere with a more distant view, as any of them may be well seen so far as 30 ft. away; nor does it prevent a general view of the collection, as is shown in the internal perspective view. Opportunity is afforded for a much more effective and interesting interior than would be obtained by the adoption of the ordinary square or oblong gallery. But the greatest advantage is the provision which the arrangement renders practicable for throwing light on the pictures from a source over the head and out of sight of the spectator, so that it falls fully on the picture while he is in the shade, and strikes the picture at such an angle as to avoid glitter or reflection from the sky, the result being that the best possible effect is obtained. This is what has always been aimed at in the exhibition in the Cutlers' Hall and elsewhere, of such paintings as "The Shadow of the Cross," "Thy Will be Done," "Lux in Tenebris," etc., and also of pictures in the Doré Gallery, and of some of Alma Tadema's paintings in London, but of course without any attempt at combining architectural effect with it. The design provides this mode of lighting to every bay, carried out so as to form a permanent architectural feature.

The successful lighting of a picture depends almost equally upon the quantity of light thrown upon it and the angle at which that light strikes it. The quantity varies in the London galleries from 29 degrees to 15 degrees, but the average of the best is 20 degrees. The latter is almost exactly the quantity in the galleries



CROSS-SECTION OF THE MAPPIN ART GALLERY, SHEFFIELD, AS ORIGINALLY DESIGNED.
EDWARD M. GIBBS, F.R.I.B.A. (FLOCKTON AND GIBBS), ARCHITECT.

South Kensington, which were built for exhibition of 1870; their section has n adopted not only at the Grosvenor llery and the new gallery of the Royal titute of Water-colours, but also at eral new galleries on the Continent.

he angle at which the light strikes the ture should be high, so as to avoid, as as possible, reflection of the sky and consequent glitter on the picture; but so nearly perpendicular above the pic- as to show by little shadows the rough- s and inequalities of the thickness of an painting. The happy medium in this ect is again to be found in the Indian seum, where the lowest ray of light falls n angle of 52 degrees with the horizon, re being consequently 20 degrees of t, the highest falling at an angle of 20 rees from the perpendicular.

he amount of glitter to which a pic- is liable is capable of exact measure- t, as was demonstrated by the late tain Fowke, R.E., and is shown on sections by lines which represent s of reflection, and which would be e apparent were the picture a sil- d glass. Supposing the top of a ure to be 11ft. above the floor in the an Museum, and the spectator 5ft. 6in. , then no glitter would be seen until spectator approached within 6ft. 4in. the picture, and as he approached er the glitter would appear more and e on the upper part of the picture. he special gallery in our design, a tator of the same height would have pproach within 5ft. of the picture re he saw any glitter. The interior pective view shows that the light is wn fully on the pictures, and yet no low or skylight is visible, and the section of the special gallery shows tly how this is accomplished.

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om Mr. Gibbs's description it will be that the noteworthy point in this n is, that in the interior, "as origin- designed" (see the perspective view), device of having a low screen over entral portion of the gallery, so as ep that portion in shadow and avoid g reflections in the glazing of the res, is made into an essential por- of the architectural design, instead eing managed merely by a textile n stretched across the room. This really very able adaptation of archi- ral design to carry out a practical ose; and as far as we know it is e; at least we are not acquainted any other picture gallery in which special form of architectural section een adopted.

e point which we are doubtful about to the two thicknesses of glass gh which the light has to come. is apparently an outer skylight with red glass—that is, we presume, suffi- y obscured to diffuse and break up sunlight, and an inner skylight of glass. As we have already said r first article, we find that in the nal Gallery there is rather a de- cy of light in all the rooms in there is a double skylight. In this the clear glass is outside and the red glass inside; in the Mappin Gal- lesign it seems to be the reverse; e should not expect that would make difference in the result. If we n a country where there was always ght sun, the double thickness and scured glass might be entirely bene- or even necessary. But consider- w very little bright sunshine there is in England, especially in the atmosphere of a manufacturing town, we should say that it is better to have as little obstruction to the passage of light as possible, provided always that it is directed towards the pictures at the best angle for seeing them.

Mr. Gibbs informs us that the gallery as erected is not in his opinion nearly so good as the original design, the trustees having objected to it on the ground that it was too great a novelty and had not had the test of experience. The gallery as erected has had this test, and light on the pictures is considered to be perfect; they are free from glitter unless viewed from too close a standpoint. They are all glazed.

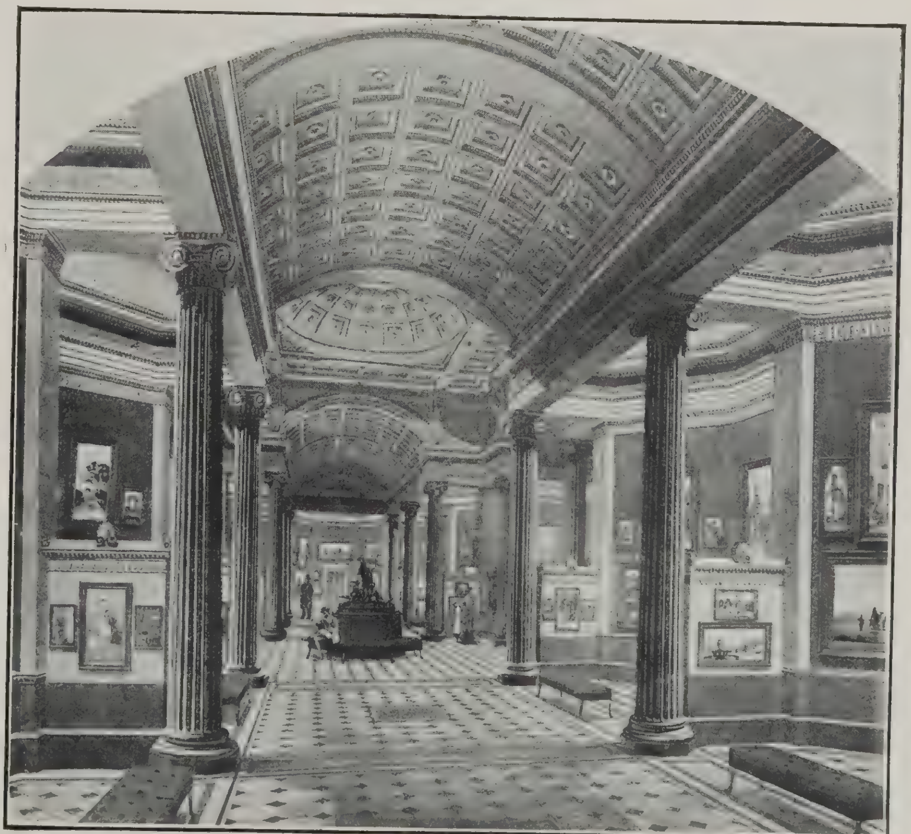
OLD PARIS.

Old Paris, like Old London, suffers inevitably as years go on from Haussmanns or County Councils or their equivalents, for it is in the natural order of things that the ancient must give way to the modern. Happily, however, there are relics of mediæval work still existing: the new boulevard, the "improvement," have not quite obliterated the past. In a lecture at the Boudoir Theatre, Pembroke Gardens, recently, Mlle. Gauthier le Botelier was able to describe many "bits" of historic Paris as yet untouched by the housebreaker's pick. Every building named in the course of her causerie on "Vieux Paris" is standing to-day, though the famous Hôtel de Sens of the Fifteenth Century of so many romances and tragedies, is now closed. Other time-honoured houses remaining, sometimes under new names sometimes adapted to the most incongruous of modern purposes, were described by the lecturer, who had a story—tragic in most cases, fascinating in all—to tell of each, from the Fourteenth Century Hôtel de Clisson, abode of the murdered Constable, Ollivier de Clisson, down to the comparatively modern Hôtel de Rohan and Hôtel de Cagliostro, of the late 18th Century. Old Paris would seem to have stood the test of time, at least in so far as its historic houses are concerned, better than Old London.

A KODAK COMPANY SHOW-ROOM.

Excellent examples of shop-fitting are to be seen at the new retail premises of the Kodak Company, in Kingsway, London. The shop-front at the Holborn-ward corner of the building is fitted in mahogany and gunmetal, with gunmetal stallplates bearing the company's name in raised letters. The windows are made on the "shadowless" principle, without upright sashes, the angles being ground together and joined with a special cement.

White enamel panelling is fitted throughout the shop, and the window-, wall-, and counter-cases are framed in German silver. The lighting, which is excellent, comes through prism glass in the transom. A feature of this room is a plate-glass-topped demonstration counter, beneath which are concealed a sink and drying racks for use in demonstrating the uses of daylight developing appliances and other accessories. Side windows, which are not used for display, have obscured glazing, against which are ranged tiers of stock cupboards, fitted on rollers so that they can be slid out of position, giving access to the windows for cleaning, etc. The shop-fitters who executed the work were Messrs. E. Pollard and Co., 27, Clerkenwell Road, London, E.C.



THE MAPPIN ART GALLERY, SHEFFIELD, AS ORIGINALLY DESIGNED.

E. M. GIBBS, F.R.I.B.A. (FLOCKTON & GIBBS), ARCHITECT.

CORRESPONDENCE.

The Editors disclaim all responsibility for the statements made or opinions expressed by correspondents.

Correspondents are asked to be brief, and to write on one side only of the paper.

An Appeal to Architects' Assistants.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—As hon. secretary of the Guild of Architects' Assistants, which was inaugurated in February, 1909, I request the favour of being allowed to comment on the position of the architect's assistant at a moment when at least two of the more pronounced grievances of the architect's assistant have been brought to the notice of your readers by the publication of some extracts from the opening presidential address of Mr. G. E. Bond, J.P., to the Society of Architects.

I desire to point out the power of the assistant for good or for evil in the passage of the proposed Bill through Parliament, and to draw attention to the implication conveyed in Mr. G. E. Bond's address, that the assistant represents only and merely a passing phase of professional experience, instead of, as we commonly find it to be, a permanent one. From this position naturally springs the provision of protection for practising architects alone. I say "alone" advisedly, for, up to the present, the published proposals in regard to assistants deal only with the transition period previous to registration. The assistant may congratulate himself, in reflecting upon the future Registration Utopia, that a recent legal decision to the effect that he is a practising architect will have to be overturned before he can be excluded from the light and banished into outer darkness. We also have the admission that, "in the congested state of parliamentary business, only unopposed measures have any chance of a second reading." I beg to direct the attention of your readers to this statement. . . . The possibility of the registration proposals passing into law should not be overlooked by assistants; and, as they form the majority of the membership of the promoting societies, it becomes a matter of pressing importance to the profession, to see that their interests are safeguarded by the Bill, and to assert their claim to recognition within it. . .

Mr. G. E. Bond has well described two existing evils, the unjust competition of the incompetent assistant, and that of the "ghost"; but he utterly fails to prove that these undesirables will cease to exist under registration. It is evident that if the Bill contains no clause to the effect that registered practitioners must employ only registered assistants—that is to say, those members of the profession who are passing the examinations of the Registration Authority and have been articled—we shall witness the coming of a huge class of unregistered assistants recruited from the technical institutions, and whose general standard of competence will be much lower than that of the registered assistant, presuming that the examinations of the latter are educationally effective. This class will be brought into conflict with registered assistants, reducing the market value of the latter by reason of the cheapness of their labour, and will suffer from the keen injustice, in the case of the few competent ones, of impossibility of registration and of any further advancement on account of their lack of opportunity and cash for the necessary education.

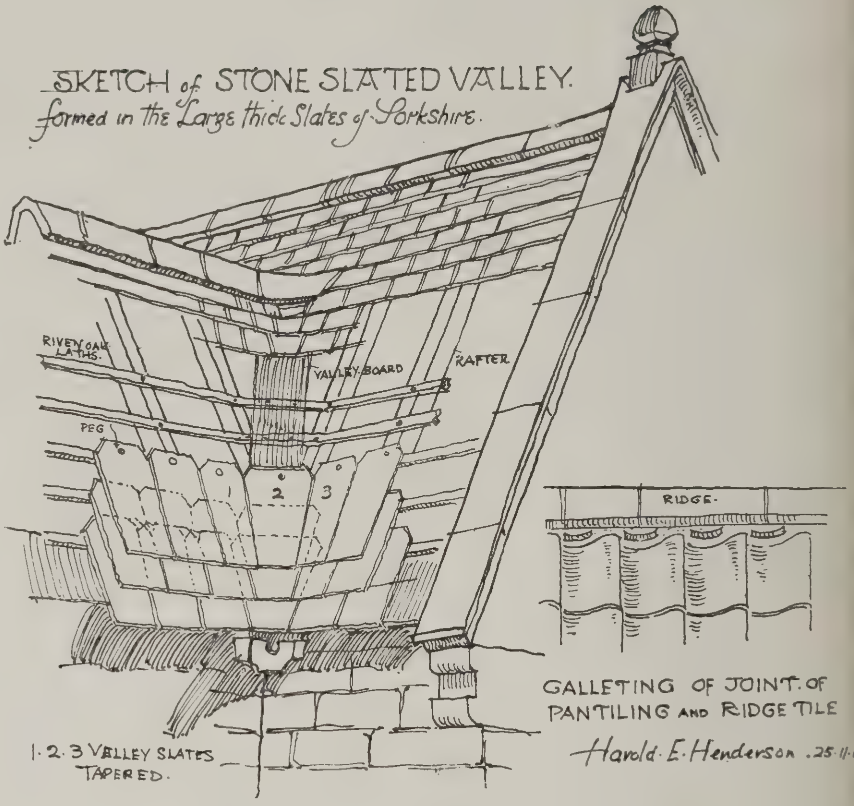
The "ghost" is a still more difficult problem; for, even under registration a clever man may have to seek employment with a practitioner who is merely competent; and, whilst an architect's office is his fortress, who may say nay to the transactions in the interior, when they are of such an intimate nature?

The questions of the pupils, restriction of their number in a practitioner's office, and the provision of some check as to their progress in order to satisfy a parent or guardian that his son or ward is really being taught; the unpaid assistant; the proper regulation of assistants' salaries; and the continuance of the present conditions of open competition for public works, are all matters that primarily affect the assistant, and should be the concern of the profession as a whole, seeing that all must have had, or will have, a more or less protracted period to pass through as assistants, while many, through lack of ability or opportunity, will remain such. . .

I sincerely trust that when the details of the proposed Bill are discussed, the assistant will make his presence felt, and that he will receive the support of those few practitioners who remember when they were assistants. We desire the same degree of protection for assistants as the registrationists propose for principals, and for precisely similar reasons. We want a Bill which will protect the whole profession, and not a part of it, if we are to have a Bill at all.

ERNEST J. DIXON, A.R.I.B.A.,
137, Church Street, Edgware Road, W.

[As indicated by the marks of elision, we have been compelled, from considerations of space, to omit portions of this letter. We are willing to give all sides a hearing, but letters should be brief and pointed.]


SKETCH of STONE SLATED VALLEY.
formed in the Large thick Slates of Yorkshire.
RIVEN OAK LATHS.
VALLEY BOARD
RAFTER
PEG
1
2
3
RIDGE.
GALLETING OF JOINT OF PANTILING AND RIDGE TILE
1.2.3 VALLEY SLATES TAPERED.
Harold E. Henderson .25.11.11

STONE SLATED VALLEYS, ET IN YORKSHIRE AND LANCASHIRE.

BY HAROLD E. HENDERSON.

Owing to the large slates which are tainable in Yorkshire and Lancashi stone slated valleys are the exception, not the rule. The sketch of a swept val shows one of the methods adopted, bu is not universal; and in one or two amples I have noticed where the slates small the more scientific method used the Cotswold slaters, illustrated by Gunn in the issue for Nov. 22nd, adopted.

In the example illustrated, from an farmhouse (c.1650) at Thoralby, in We leydale, the slates numbered 1, 2, an are tapered and cut to suit, and hung the usual manner by means of oak pe It is crude compared with the Colley ton method, and although very poor b is obtained, is, I believe, watertight.

The inverted ridge stone, forming short gutter at the junction of the lo ridge and the main roof, is to be seen Yorkshire, but in most cases the ridg only continued upwards (as shown sketch), the "mossed-joint" being rel upon to keep the weather out. Ri stones are nearly always dressed to a tain extent, either "open bosted" "scutch faced," both giving a rough ture. I have never seen the flat tile fill as sketched by Mr. Gunn at the inter tion of the pantiling and the ridge, the insertion of a piece of curved pantile, set almost level with the mor forms a neat finish if well executed.

[The previous articles to which refere is made or implied above are: "St Slating," by Mr. Harold E. Henderson our issue of November 15th; and "M about Stone Slating and Pantiles," by Edwin Gunn, November 22nd, p. 538.]

PENMANSHIP.*

The use of a decorative hand-writing, commonly called "script," has become of late years a recognised branch of artistic study, and a book containing a number of examples of fine penmanship of the period from the sixteenth to the eighteenth century is likely to be found very useful in the suggestions it contains of different methods of producing beautiful and characteristic writing. The examples here given were collected by the late Mr. Day, who unhappily did not live to contribute to the literary portion of the book, which is supplied with a short introductory essay by Mr. Percy J. Smith.

One may class the examples contained in the book under two heads: those which represent styles such as might be used in the ordinary course of writing, and those which are obviously and intentionally decorative writing, such as would only be used to give dignity to important documents. When we speak, however, of any of these examples as showing a style of handwriting for ordinary purposes, we mean a style which might have been so used in an age when there was less hurry and when people had time to write beautifully. In the present day no one has time to write well in ordinary correspondence; we have to be content to be fairly legible, and many people do not seem even to attempt to acquire that virtue. Among the writers of fine hands the architects stand well; the finest handwriting we have ever seen in an ordinary letter was in a letter of Alberti's (of whom we are rather surprised to find no example in the book); and we could name two architects of to-day, one of them a very eminent one, both of whom write letters that are equally remarkable for beauty and legibility in the handwriting; though there is indeed another eminent architect whose writing may be said to be the most illegible on record since that of the late Dean Stanley, which reached the *ne plus ultra* in this respect. But generally speaking, artists of all classes write rather better than the majority of their fellow-men; their habits of design dispose them to take some thought of the lines of their pen-strokes. And it would probably be correct to say that the most untidy and illegible of educated writers are University men as a class. Their defence no doubt would be that they are more occupied with the matter in them than the manner of their writing; but the matter should at least be set down in such a form as not to bewilder and irritate their correspondents.

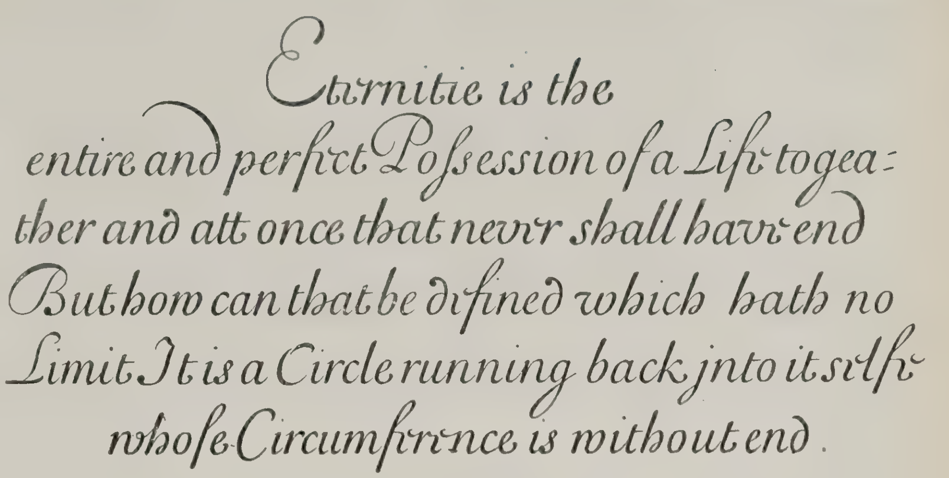

Eternitie is the
entire and perfect Possession of a Life togea:
ther and att once that never shall have end
But how can that be defined which hath no
Limit It is a Circle running back jnto it selfe
whose Circumference is without end.

FIG I.

Writing itself may also be divided into upright and sloping. There is rather a movement to-day in favour of upright writing, which is often insisted on in schools; but a sloping hand gives more facility for combining a fair amount of speed with a good appearance. Mr. Percy Smith remarks on the influence which the beautiful Italian semi-formal script of the Renaissance had upon hand-writing generally; "mainly as the result of this influence, English cursive writing gradually lost a great part of its disjointed and angular character; and acquired the freely written and linked-up manner exemplified in the writing of Peter Gery" (example 51 in the book). This is unquestionably a very beautiful piece of flowing penmanship. Perhaps still finer is the one (No. 50 in the book) which we have reproduced as Fig 1.; it is a piece of round-hand writing from the copy-book of Richard Daniel, 1664. Of course this is more of a "copy-book" hand than a correspondence hand; but some beautiful examples of Italian cursive hand are given, which might quite well have been used in ordinary writing in days when few letters were written and there was more time to give to them.

The employment of upright writing, at least in the examples given in this book, seems to have been generally for important documents rather than letter-writing; and there seems always to have been a tendency, in upright writing, to make vertical excursions with the pen above and below the main lines of the writing for the sake of decorative effect. Fig. 2 (example 68 in the book) is a characteristic specimen; it is an Italian mercantile hand of the date 1554.

The writing of letters in print form, which is a good deal used now for special inscriptions for presentations and such purposes, seems to us rather a doubtful expenditure of talent; it allows the appearance of printed matter to be produced with a little more freedom and variety than is

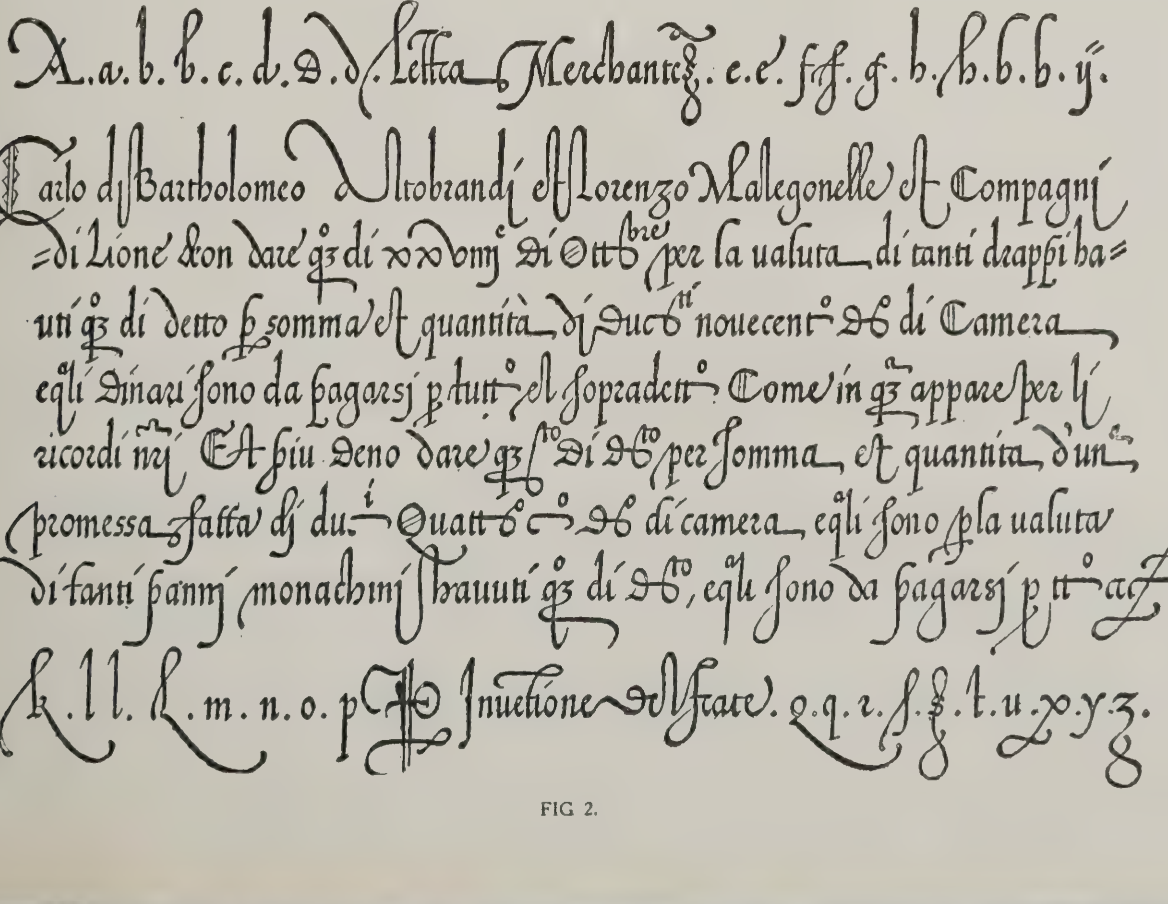

A.a.b.b.c.d.d.d. Lettera Merchantesca. e.e. f.f. g. h.h.h.h.y.
Carlo di Bartholomeo Altobrandi et Lorenzo Malegonelle et Compagni
di Lione deon dare qz di xxvnj Di Ottbre per la ualuta di tanti deappi ha=
uti qz di detto p somma et quantità di Ducti nouecento d6 di Camera
egli Dinari sono da pagarsi p tutto el sopradetto. Come in qz appare per li
ricordi nri Et piu deno dare qz sto Di d6to per somma et quantita d'un
promessa fatta di du.i Quattro c.o d6 di camera egli sono p la ualuta
di fanti panni monachini hauuti qz di d6to, egli sono da pagarsi p tto ac
k.l.l. l.m.n.o.p. Inuetione dell frate. q.q.r.s.s.t.u.x.y.z.

FIG 2.

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*Penmanship of the XVI., XVII., and XVIII. Centuries: A Series of Typical Examples. By the late Lewis F. Day. London: B. T. Batsford, 1911, 18s.

possible with cast type, but it is not so very superior in appearance to a really good fount of type, and after all it is only an imitation of type, whereas writing with a pen should have its own style and character as hand-work. The various examples of initial and tail-flourishes worked into complicated figures might have been spared; they are but what may be called writing-master's art.

But the study of the beautiful examples of cursive hands in the book may beget an ambition in the readers to emulate them; and the book has a further interest for us as being the last production of Mr. Day, who did so much to illustrate and recommend various forms of artistic production.

ENQUIRIES ANSWERED.

Books on Perspective Drawing.

B.P.D. (Ystrad Mynach) writes: "Kindly advise me on the choice of a book on perspective drawing."

—"Architectural Drawing and Sketching in Perspective," by H. W. Roberts (7s. 6d. net); "Architectural Drawing," by R. Phené Spiers (8s. 6d. net.); "The Principles of Architectural Perspective," by G. A. T. Middleton (2s. 6d. net.). All the foregoing books are to be recommended, and may be obtained from Mr. B. T. Batsford, 94, High Holborn, W.C.

Silver-Grey Appearance of Half-Timber Work.

With further reference to the enquiry published under the above heading in our issue for November 22nd, a contributor writes: Your correspondent can get the grey effect of old oak quicker by washing the exposed surface of the oak with lime water. The brown colour almost disappears at once, and the lime water is not deleterious to the life of the oak. If your contributor uses the adze on his oak he must be careful to do it properly—it should be very little rougher than sawn oak. The modern method of chopping big pieces out of the oak, under the impression that it was the method used by the old carpenters, is nothing but affectation.

H. E. H.

Workman's Compensation for Accident.

SUBSCRIBER writes: "A local builder undertakes to make a cesspool in shifting sand, but no contract is signed. The sides of the cesspool fall in, and a workman is killed. Who is responsible? The circumstances of the case are as follows: (1) The local builder is not insured; (2) if an action is brought against me, it will cost as much to defend it as to pay compensation; (3) for all contracts over £100 the usual form of the R.I.B.A. is used, but for contracts under that amount no agreement is ever signed. I am informed that it is not necessary. If that is so, why is the clause indemnifying the employer against damages in case of accident inserted in the contract of the R.I.B.A.? If it is necessary for large contracts it must be equally necessary for a contract of £10. (4) Am I liable in any way for accident in such small contracts, a number of which have been carried out? If so, have I no means of protection?"

—In reply to your enquiries as numbered: (1) The builder is responsible. Insurance only protects the employer, and primarily does not concern his employees at all. (2) I am of opinion that an action for damages will not lie against you, because the building of the cesspool was not "in the course of, or for the purposes of, your trade or business." (3) The Indemnity Clause was inserted in the R.I.B.A. conditions as a measure of precaution and to cover all risks of contract, sub-contract, and the many dealings with various trades which the differing kinds of building contract involve; no doubt also the Clause has taken into consideration sections 4 (2) and 6 (2) of the Workmen's Compensation Act, 1906. (4) I believe not; but there would be no harm in using a simple form of contract containing an indemnity clause. Or it might be made a rule to employ no contractor who does not insure his workpeople.

F. S. I.

Rural Water Supply.

J.M.W. writes: "It is proposed to obtain a rural water supply by gravitation. The length of the main would be about four miles on road, with three or four barrel fountains at intervals, and with three branch pipes off the main. The water supply is taken from a well gauging 10 gallons per minute. Please give me your opinion about (1) head, pressure, velocity, etc.; (2) the requisite bore for pipes; (3) size of reservoirs required; and (4) approximate cost."

—The pressure in lbs. per sq. inch at any point will be the effective head in feet at that point multiplied by 0.434. The maximum velocity in the pipes should be from 3 to 5 feet per second. The size of the pipes depends upon the exact position of the branches, the relative distribution of the population, the ground levels along the lines of the main and branches, the number and character of the bends, junctions and turnings. The larger the pipes the greater the quantity of water which can be delivered in a short time, or if the quantity of water is constant, then the greater will the pressure be. In this case it will probably be desirable to use 4in. diameter pipes at the reservoir, reducing to 3in. and subsequently to 2in. at the end of the branches. The reservoir should hold about 50,000 gallons, say, 40ft. by 20ft. by 10ft. deep, and be constructed half in the ground and half out. The cost of the complete works, including reservoir, pipes, fire hydrants, and barrel fountains, would be about £2,000, to which should be added, say, £250 for engineer's commission, quantity surveyor, clerk of works, legal and other expenses, making a total of £2,250. It is assumed that the water will be able to enter the mains at a depth of about 3ft. below the surface. Care should be taken that the pipes do not rise above the hydraulic gradient.

HENRY ADAMS.

THE PRIVY COUNCIL BUILDING.

Under the direction of the Office of Works, a scheme of renovation has recently been carried out in regard to the interior decorations and arrangements of the Privy Council building in Downing Street, including the spacious Council Chamber in which the appellate business of the Judicial Committee is transacted. The high oak panelling, with its handsome cornice, has been stripped of its coat of varnish so as to restore the oak to its original lighter hue. In place of the cloth-covered partitions which formerly separated the seats allotted to the Bar, solicitors, and Press from the space reserved for the ordinary public, panel oak barriers, matching in colour the rest of the fittings of the Council Chamber, have been put up, and the Royal Arms in the same coloured oak have been put up on the wall above the Registrar's seat.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

At a meeting of the Council held on November 22nd, the following applicants were recommended for admission: (a) To Membership: Albert Light, surveyor, Wharfedale R.D.C.; C. F. Hodgson, surveyor, Otley U.D.C.; F. Hatcher, Deputy Borough Engineer and Surveyor, Neath. (b) To Associate Membership: F. J. Reilly, Surveyor's office, Cockermouth U.D.C. (Under the new by-laws, these elections will be ratified at the next Council meeting if no written objections are lodged within 14 days).

From the applicants recommended for admission at the last meeting eight members and four associate-members were elected.

The report of the Superintending Examiner giving the results of the examination held November 2nd, 3rd, and 4th, was received. The results are as follows: A. D. Barron, Diploma in Municipal Engineering (covering the subjects of Buildings, Highways and Sanitation), with special mention for excellence of work; R. Wilson Jones, Certificate in Electrical and Mechanical Engineering as applied to Municipal work; J. Reed Edwards satisfied the examiners in Building and Structural Engineering as applied to Municipal work; Henry Peake satisfied the examiners in the general paper; T. S. G. Menzies satisfied the examiners in the General paper.

Council Meeting.—It was decided that the next Council meeting be held on December 16th.

B. WYAND, Secretary.

SAFETY DEVICES FOR LIFT AND HOIST DOORS.

With respect to the article on this subject which appears on page 543 *et seq.* of our issue for November 22nd, it may be explained that the proofs of the article which were sent to the author were received by us after the matter had gone to press, so that effect could not be given to his corrections after the editorial revision.

Mr. Hunter is not responsible for the title we gave to the article, which, he points out, treats of safety devices for lift and hoist doors. He further wishes it to be made clear that: "The suggested methods of protecting lift openings are merely the literal interpretation of coroners' recommendations which have from time to time been sent to the Home Office. They read thus: 'That it ought to be made impossible to open the protecting gates of a lift or hoist unless the cage is level with the floor, and conversely impossible to start the cage unless the gates are properly closed.' By an omission it has not been made sufficiently clear that the reason for advocating a system of protection entirely separate from the iron fireproof doors is the fact that the various appliances the writer has seen have not been designed to operate on a heavy type of door, and as a consequence, would not survive any length of time."

The first sentence of the second paragraph in column 3, page 544, should read as follows: "Having removed the protection bar, collapsible gates, or light wire-work doors inserted in wood frames, with electrical and mechanical locking gear as described, should then be fixed to the jambs, flush with the inside of the well-hole as shown in Fig. 5."

RITWELL MANOR, OXFORDSHIRE.

As recorded in our issue of November h, Fritwell Manor, the late Mr. rner's sometime home, has been pur- ased, through Messrs. Nicholas, the auc- neers, 43, Pall Mall, S.W., by Sir John non, the Solicitor-General. We now e some illustrations and a few particu- s of this fine old manor-house.

The Saxon manor of Fritwell was given the Conqueror to Bishop Odo, who nted it to one Rainald or Wadard, who joys the immortality of being figured in Bayeux Tapestry. After the rebellion Odo, the manor was confiscated, and s then given to "the trusty knight illiam de Arsic." It successively passed o the hands of the Pipard family, of alter Harper, and of William Holme 14). Later it was purchased by Edward nners, third Earl of Rutland, by whom was sold in 1570 to Edwarde Yorke. To son the building of the present manor- use is attributed. On the death of this n, the manor-house was sold to Colonel muel Sandys, a militant Royalist. On death the property was sold to Sir muel Danvers, whose son sold it to Mr. muel Cox; the Wake family acquiring in 1729.

It was in 1892 that the manor-house was let to the late Mr. Thomas Garner, who, guided by his own profound knowledge and exquisite taste, restored it with loving care. The house is built of stone from a local quarry. Its broad, simple flanking gables project a few feet beyond the main walls, and the central porch of classic design, with carved stone columns of the Corinthian Order, lends a touch of dignity to the south front. The barred and mullioned windows retain in nearly every case the original leaded glass, and are surmounted by characteristic dripstones. The roof is covered with old stone tiles.

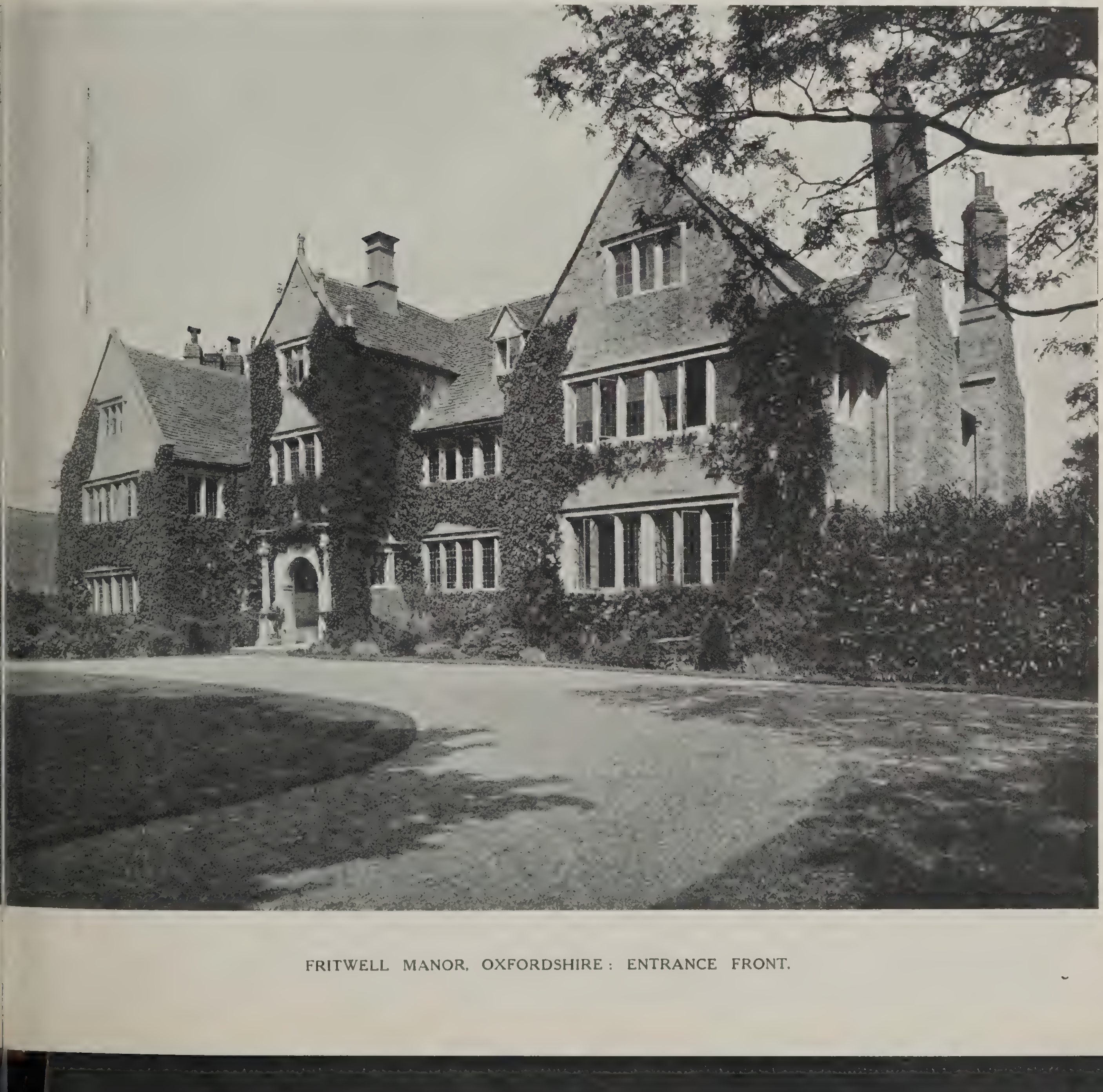
Inside, the stone-flagged entrance hall, 18 ft. by 14 ft. is lighted by a three-casement mullioned window, and the ceiling is supported by three heavy beams. The inner hall, 17 ft. 3 ins. by 16 ft. 6 ins., is also paved with stone flags, and it contains a fine old open fireplace with moulded stone arch, and is panelled throughout in old oak. The dining-room is 25 ft. by 17 ft. 3 ins.; the parlour, 18 ft. 6 in. by 12 ft. 3 in. The staircase hall, of which an illustration is here given, is stone-flagged, and partly panelled with oak. The fine old oak staircase, which is one of the most noteworthy features of the house, has a balustrade which is said to be identical with that seen in Paul Veronese's "Christ in the House of the Levite." The staircase is lighted by two three-casement mullioned windows, and leads to a galleried landing. The chapel, 18 ft. 6 ins. by 12 ft. 3 ins., has an oak-beamed roof, and the floor is of old elm. Mr. Garner designed the altar-hangings.

The state bedroom, also illustrated here, is 25 ft. by 17 ft. 3 ins., and is wholly panelled in finely figured oak. Fluted and reeded Ionic pilasters and carved oblong panels form a frieze. The chimneypiece, with its recessed and moulded panelling, is strongly characteristic of the Jacobean period; and there is a fine wagon ceiling of plasterwork, with decorated tympana.

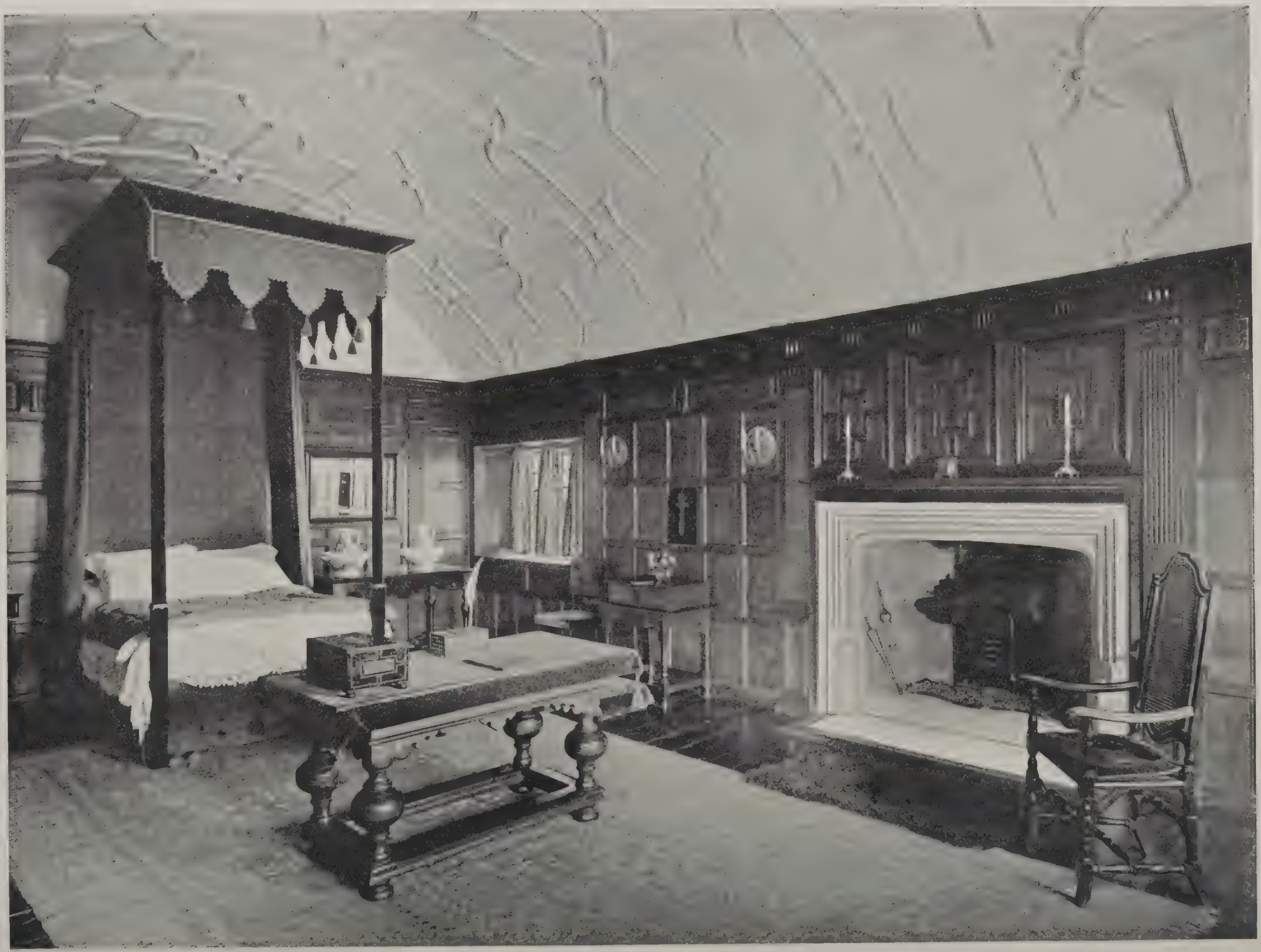
The gardens are of delightfully old-world character, as may be inferred from the accompanying view of the yew walk by which the rose-garden is traversed.

L.C.C. Trade Scholarships.

The London County Council Education Officer draws attention to the Council's trade scholarships, by means of which boys may secure free education (with maintenance grant) at day technical schools, where they will receive such instruction as will prepare them on leaving school to take up either apprenticeships of employment in skilled trades. Thirty scholarships in building are included in the list, which may be obtained from the Education Offices, Victoria Embankment, W.C.



FRITWELL MANOR, OXFORDSHIRE: ENTRANCE FRONT.



FRITWELL MANOR: THE STATE BEDROOM.

ACOBEAN ARCHITECTURE.

In his paper entitled "Thoughts on acobean Architecture," read before the rchitectural Association on November th, and from which some extracts were ven in our issue of November 29th, Mr. rthur T. Bolton, F.R.I.B.A., made inter- ting references to many more examples the "wonderful half-century" than we e able to include; but the following ddenda seems indispensable.

Aston and Chilham.

Aston Hall, 1618-35, and Chilham Castle e near in date, but far apart in archi- ctural character. Aston, in feeling, is ore Elizabethan than Jacobean, particu- rly in its interior work. It hangs back the stage of bossy, fretted, profuseness om which the new work of the century as freeing itself, and, except in the gallery iling, shows little assimilation of the ssons that were being derived through e Italians from classic art. There are vo plans of Aston in J. Thorpe's col- ction.

Bramshill.

Of the early Jacobean work attributed to nigo Jones, Bramshill is the most im- ortant. A little book by the late Sir V. H. Cope gives us all that he could col- ct about the house. It is certainly built ver an old building to the extent of being ed in plan by the preceding structure. egun in 1605, it was completed in 1612, ccording to the date on a stackpipe with e initials E. Z.

FRITWELL MANOR: DETAIL OF CENTRE GABLE AND MAIN ENTRANCE.

It appears to be the case, however, that, hen the building was nearly finished and was proposed that the Prince Henry hould occupy it, someone was called in ho advised the reversal of the main en- rance from one end of the plan to the ther. So it came about that the famous rontispiece was erected as an afterthought nd cutting across the hall windows. here are two ways for the architectural student of looking at this frontispiece, and the easier is to be shocked at the wild and barbarous detail. The second and more difficult way is to realise that it is a work of character, and would produce its effect, independent of the said detail. After that you can settle down to find out how the effect is produced. In the meantime our friends the artists will continue to find it a subject.

As regards frontispieces, a prevalent feature in Jacobean times, we may as well

FRITWELL MANOR: THE YEW WALK

agree at once that they are the seventeenth century counterpart of the portico of the eighteenth. The further interest of Bramshill is that the back is a fine example of the many-gabled earlier treatment, as we should call it, while the front is balustraded and the roof hidden. This façade is in long, level lines and flat surfaces, with only two bold end masses, in the return of which are two recessed loggia. Bramshill illustrates, as well as Hatfield, the Jacobean tendency to discard entablatures and obtain effects independently, either by flat masses or by vertical breaks. We have seen this revived in our own day. When we consider the heavy price the succeeding centuries paid for their crowning cornices, our sympathetic interest is aroused. With the dates of Longleat, 1580-88, and Woollaton, 1567-80, in mind, we cannot doubt that this must have been deliberate.

Knole.

The Jacobean work at Knole, Kent, 1603-05 (and later) is in the nature of an alteration of an older house, a refashioning to date of an old double quadrangle plan. As the work was for the Earl of Dorset, for whom, as Sir Richard Savile, John Thorpe had designed Buckhurst, and as it shows in the gables and treatment of the south side traces of his manner, it is fairly safe to accept that attribution. The Venetian Ambassador's Room, lit by a single window of the Palladian motive, lined with white woodwork and having a chimney-piece of a well-recognised ty would, however, one would think, ascribed to Inigo Jones.

Chilham.

Chilham Castle is known by the chu registers and by the date 1616 over doorway to have been occupied but completed in that year. A "Mr. Smit was doubtless the builder.

The decisive stage of Jones's car began in 1619 with the Whitehall desig but the Star Chamber design of two ye previous is quite Palladian. There however, in the Burlington-Devonsh collection an admitted drawing of a se Jacobean character signed by Inigo Jo and dated 1616. It is a three-storey narr entrance bay, ending with a pedim

FRITWELL MANOR: THE STAIRCASE HALL.
]

tting on a pierced balustrading,
bean in character.

DISCUSSION.

roposing a vote of thanks to Mr.
hur T. Bolton, Mr. Lawrence Weaver
l he had been much impressed
the erudition which the lecturer had
ught to his subject. He was much in-
sted in the new evidence with respect
nigo Jones. It would probably come
a great shock to some to realise that
go Jones was producing what might
called traditional work long after the
elopment of his Palladian style. Mr.
aver then commented upon Mr. Bol-
s method of combining political his-
with architectural history, adding
t if we only approached buildings in
terms of the people who had lived in
m, we should have a far more vitalised
lerstanding of their inward signifi-
ce.

Ir. W. Curtis Green, seconding the
e of thanks, said that Mr. Bolton was
eed a walking encyclopædia. An ideal
lent, he ignored the superficial aspect
question, and sought for what lay be-
d it. He had what he (the speaker)
ld call, for want of a better word, a
se of "Architectonics." As Mr. Bolton
shown, he continued, ornament fre-
ntly only obscured architecture, and he
ught that we wanted to clear our minds
to think not of ornament and of styles,
of buildings. He was surprised that
Bolton had not drawn an analogy be-
en Jacobean work and François
mier work, for between the two there
an obvious similarity.

Ir. Yates drew attention to the absence
Jacobean work of painted decorations.
vas very remarkable that at this period
art which, 100 years previously in the
rches of Norfolk and Suffolk, had been
ught to a very fine state of perfection,
uld have totally disappeared.

Ir. Weaver, interposing, made refer-
e to the painted ceiling in the Long
lery at Pinkie House, Musselburgh,
ch was the outcome of English in-
nce.

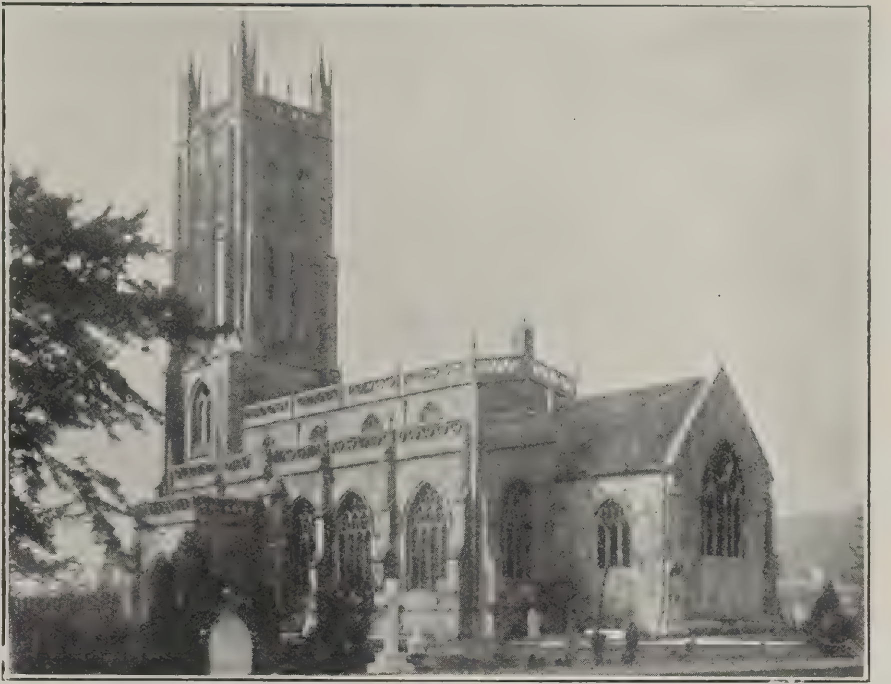
r. G. S. Mileham said that the period
which Mr. Bolton had dealt was one
he greatest importance. It signified
introduction of architecture into the
of the village, as well as into the life
he monastery. It was the period in
ch the human element entered into
itecture.

Ir. Oliver enquired whether the ac-
nts of these buildings were still in ex-
nce. He knew of those for Whitehall,
he Record Office, showing the cost to
e been £16,500.

r. Bolton said there were volumes at
field House, and, of course, State
ers.

r. Louis Ambler asked whether the lec-
r could assign a date to Moyns Park.
whole design seemed to be Tudor,
not distinctly Jacobean. He person-
found great difficulty in distinguish-
between Elizabethan and Jacobean
k. It appeared to him that the diffi-
y was due largely to local causes. In
north, for instance, the Elizabethan
e was not so fully developed in the
y period as it was in the south.

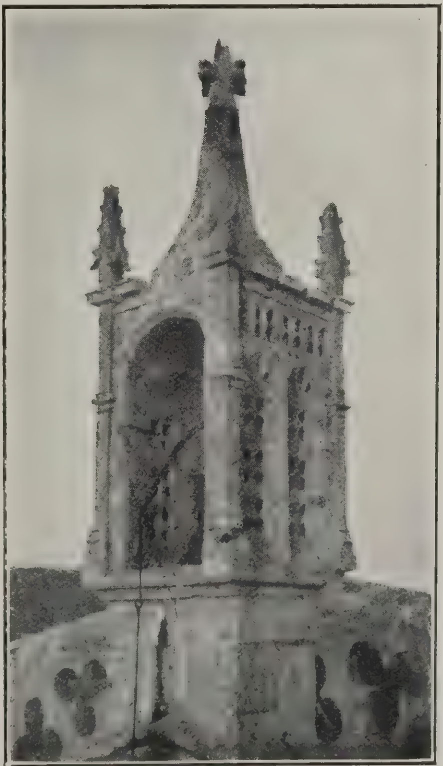
r. Gerald Horsley, in putting the vote
hanks, suggested that it would add im-
sely both to our interest and profit to
e prepared a list of architects of the
od. In travelling about the country it
very puzzling to come across some
itectural feature—the remarkable staircase at Burghley, for instance—and not to know who designed it. In this case there was a strong resemblance to the Henri III. staircase of France, and the pediments to the windows of the Dower House were purely Francis I. in character; yet their authorship was a matter for speculation.



GENERAL VIEW OF WRINGTON CHURCH SHOWING BELL-COTE.

Mr. Bolton, in reply, said that at the present time a comprehensive list of architects was practically hopeless. Discoveries were sometimes made, but they were largely accidental. With regard to building accounts, those for Wadham were in Mr. Jackson's book.

Referring to Jacobean decoration, Mr. Bolton reminded his questioner that he had shown the gilt chamber at Holland House. Reference to Du Cerceau and the François Premier period had been omitted for want of time. Mr. Bolton did not think he said it was easy to distinguish between Jacobean and Elizabethan work. He agreed that the difficulty arose largely out of local influences. A later phase of Elizabethan work was thoroughly impregnated with the German, presumably because Elizabethan policy favoured the Huguenots and the Germans.



BELL-COTE ON WRINGTON CHURCH.

DETAILS, OLD & NEW.—XXXIII.

Bell Cote, Wrington, Somerset.

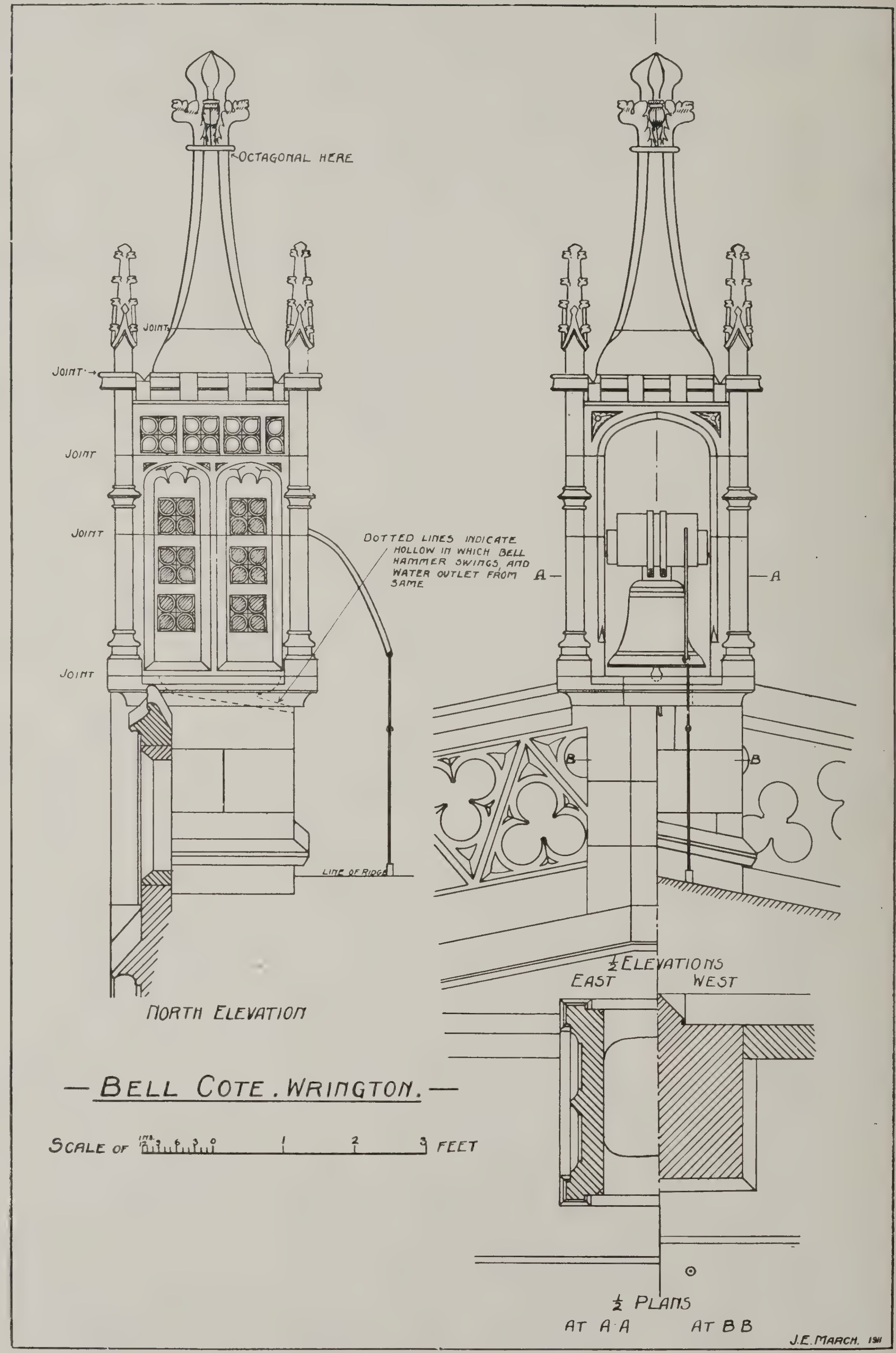
The church of All Saints', Wrington, is a beautiful example of the Somerset Perpendicular style. The pinnacled sanctus bell turret illustrated, open to east and west, but with pierced panels to either side, stands on the east gable of the nave. It is a very rich example of a feature not at all common generally. On account of its height the nave appears to be rather short. A feature of the interior of the church is the slenderness of the nave arcade and the general lightness of effect. A fine screen stretches across the whole width of the building and has no fewer than 22 openings.

The chancel is in the Decorated style with an uncommon east window, and with buttresses in which are canopied niches. The tower has been described by Professor Freeman as "the finest square tower in all England, and therefore possibly in the whole world." From it, the proportions of the Victoria tower at Westminster were taken. It rises to a height of 114 ft.

In the vestry under the tower are preserved some old chained books: The Bible, the "Book of Martyrs," "God's Holy Covenants," and Bishop Jewel's "Apology for the Church of England." Hannah More, the authoress, was buried in the churchyard, and in a cottage adjoining the church John Locke, the great writer, was born in 1632.

Situated as this church is in the Wrington Vale, it is always seen to advantage, with the background of the Mendip Hills.

J. E. M.



MEASURED AND DRAWN BY J. E. MARCH

CONCRETE AND STEEL SECTION

(MONTHLY.)

Opportunity for rchitectural raughtsmen. The hard case of the architect's assistant has been stated, on various occasions, with a fair gree of fulness and freedom. We know, only too well, that the out- ok for the assistant of average ability is rely dismal. It is only the favoured v who can obtain the opportunity of rning a living wage, while many are rking hard for remuneration that uld by no means satisfy a builder's bourer, and there are far too many who, pecially during periods of depression, nnot get work at any price. It is com- ained that for this state of things regis- ation is no remedy; but we do not alto- ther agree with that view. If registra- n is of any substantial advantage to the ofession at all, it necessarily follows at the assistant will share in it, at least some degree. But as there is many a p 'twixt cup and lip, registration may ance to be again indefinitely postponed, d other things may happen to retard e general movement towards reform on which the profession has entered. this movement, however, there is dis- ct evidence that the architect is at ngth realising that he must not only nsolidate his interests, but enlarge his rizon. He is even beginning to pay ore earnest attention to reinforced con- ete construction.

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eglect of Rein- rced Concrete. That brings us to a point upon which a word or two of advice to assistants may chance to pos- ss considerable importance. Many a incipal, finding himself bereft of ork because of the extension of inforced concrete construction, either plores his inability to adapt himself to e new conditions, or deliberately de- ines to enter into competition with the ecialist. If he is approaching or has ssed middle age, he is apt to talk about aving the new system to the younger en; and yet, more often than not, instead taking care to see that his pupils shall ceive instruction in it, he, consciously unconsciously, infects them with his wn disregard for it. The assistant gets idea that reinforced concrete work is ot architecture, but engineering. Hence e work misses a good deal of architec- ral skill, and the assistant misses what e have reason to believe is an excellent portunity of bettering his own position, well as helping to rescue the profession om the *impasse* towards which it must ntinue to gravitate unless it will con- escend to enlarge its scope; for that as inforced concrete building grows more, rdinary building will grow less is surely self-evident proposition. And the assist- nt, more often than the principal, is ung and adaptable.

Choice of Change. What, then, is the assistant to do? Shall he, wasting in despair, die because the jobs are are? Shall he emigrate to some grow- g country where building develop ents seem to give him a better chance, r where, at the worst, a change of occu- ation will not, as it might in this country, among his circle of relatives and acquaintances, brand him as a man who, having failed to earn a subsistence in his chosen calling, has had to turn his hand to something less ambitious or less dignified, but more certainly lucrative? Too many promising young fellows do that; and many others, it is to be feared, would gladly leave the country if they could command the means of getting away from it. Now, if certain information that has been imparted to us is as trustworthy as we have every reason to suppose that it is, some of the misery and self-sacrifice here indicated may well seem to be avoidable.

Why Not Reinforced Concrete Design? The architect's assistant possesses more than the average intelligence, and more than the ordinary equipment of education. We have at all events the right to assume that he does, or, alternatively, to declare that, falling short of this description, he ought never to have been admitted to the profession, and that the sooner he quits it, the better for it and for himself. He will neither adorn it nor get much benefit from it. True, he may be a very competent man, and yet lack the opportunity to do good work, or even to make a decent living. Why, then, does he refuse to turn his education to account in a direction in which his knowledge and skill would be welcomed? Why does he not qualify as a draughtsman for reinforced concrete design? Here is a field in which, we are assured, the demand is actually larger than the supply—a most phenomenal economic condition in these overdone days. We have heard—and we should like to be assured that it is untrue—that many architectural draughtsmen are glad to earn thirty shillings a week. We imagine that those who care to acquire a competent knowledge of reinforced concrete work will have no difficulty in doubling that sum. We are told explicitly, in fact, that it is difficult to get the right men to do such work, and that consequently situations of the kind "go a-begging." In the rush for them that may be fully expected to follow this statement—for which, while we believe it to be perfectly true, we can accept no responsibility—there is sure to be a large number of unqualified men. These stand no chance whatever.

Cautionary Counsels. A few cautionary counsels should be added. This statement of the dearth of qualified draughtsmen for reinforced concrete work must be taken in a general sense, and as an incentive to the architectural assistant to equip himself for the work rather than to apply for it at once; nor is it a free advertisement either for firms requiring competent men, or for men who, rightly or wrongly feeling themselves competent, may desire to apply for such posts. We must therefore decline to entertain any correspondence on the subject. Our object is by no means to assume, even for a moment, the duties and responsibilities of a free labour exchange, but purely and simply to convey information which has been imparted to us concerning the present state of the market. How long this condition will prevail we do not, of course, pretend to foretell; but it may be reasonably supposed that for some time to come the demand for reinforced concrete draughtsmen will continue to expand, and that therefore intelligent young architects, with a turn for mathematics, and no very robust confidence in their future as ordinary architectural draughtsmen, would be well advised to specialise in the direction indicated.

Facilities for Study. We offer this advice the more readily because the means for qualifying for such posts are becoming fairly abundant, involving but little outlay, and no neglect of the student's present occupation; while in the result, even if such a post as that of reinforced-concrete draghtsman were not obtained, or if, at the end of his course the student found himself in the happy position of no longer regarding it as advantageous, the knowledge gained would be all to the good. An architect cannot know too much of building construction; and the experience would rid him of any lurking prejudice against a system of which it may be confidently said that the better it is understood, the more highly it is esteemed. In fact, there is no longer any excuse for remaining in ignorance of the details of reinforced concrete construction. Not only is it treated of very freely in the technical journals, but lecturers on it are springing up in many directions, and manuals on the subject are now cheap and fairly plentiful.

NEW COMPRESSION MEMBER DIAGRAM.

Mr. Charles F. Marsh, M.Inst.C.E., etc., has issued through Messrs. Constable and Company, Ltd., 10, Orange Street, London, W.C., price 3s. 6d. net, a "Reinforced Concrete Compression Member Diagram," to assist in the design and checking of members under direct compression. The sheet measures about 40ins. by $30\frac{1}{2}$ins., but, when folded, is contained in a neat pocketed portfolio measuring no more than $9\frac{1}{2}$ins. by $7\frac{1}{4}$ins. The accompanying letterpress is very terse and explicit, and gives, besides general instructions for using the diagrams (for, in spite of the title, there are really two on the one sheet), examples of (1) designing a column with a total load of 200,000lbs., and (2) checking a column of 1 to 2 to 4 concrete with a 12in. square core, four 1in. diameter mild steel, longitudinal rods, and hoopings of $\frac{1}{4}$in. diameter spaced 3ins. apart. The diagrams, which have been prepared in accordance with the second report of the joint committee appointed by the R.I.B.A. and the London County Council Draft Regulations, is divided into half-inch squares, which are subdivided into fifths; and red, green, and blue lines or lettering intersecting the squares differentiate variations in size or strength of the materials. The utility of such diagrams as a means of checking calculations is unquestionable.

THE QUICK CONSTRUCTION OF TALL BUILDINGS.

Marvellous stories of rapid building in America often excite in this country rather less incredulity with regard to the speed than doubt as to the necessity for it. Light upon both these points, and upon some others, is shed by the following article, derived from the "Engineering Record."

The construction of any very tall building necessitates at least a great deal of difficult and important designing, executive and constructive work. This requires a large variety of mechanical operations, some of them on a large scale, executed simultaneously or in elaborate combination, and generally with limited time, space, and appliances. It always means the use of large quantities of commercial and fabricated materials, often specially made, and standard machinery and plant. Within the last twenty-five years, since the first of these structures was built, methods, plant, and operations have been developed, and to a considerable extent standardized, but many of them are not yet final, and hardly a new building of unusual height or that is built in accordance with some peculiar conditions or requirements but involves some novelty or improvement in its construction.

No single building ever includes quite all the interesting and important features of construction that have already been adopted somewhere. In New York, where the height of buildings is greatest, and many of them are built on narrow, congested streets, or the foundations are carried to a great depth through quicksand, there are many additions to the factors entering into the construction of a tall building under the most favourable conditions.

Importance of Speed.

Such a structure costs several million dollars, yields a corresponding income from rentals, and replaces valuable buildings, sometimes almost new, that are occupied up to the last minute with high-paying tenants. Therefore speed of construction is very important. Every day has a high cash value, and it pays to do the work with the greatest rapidity, regardless of expense. This, and the safety of the public, of the army of employees, and of adjacent property are the first considerations. They have been so ably met that in some cases the tall new buildings have been equipped and tenanted, and have become productive within a year from the time when business was being transacted in the offices formerly occupying the site, and without serious accident to life or damage to adjacent property.

Careful Preparations.

Such results are obtained only by the best organization and equipment, working to a detailed plan. Every important operation and contingency is foreseen, checked and recorded through the entire period. The principal stages of the work are commenced and ended in accordance with a schedule prepared long in advance, so that diverse vital parts of the work are done in proper sequence or simultaneously in combinations that avoid complication and produce the quickest and best results.

Space Limits.

The greatest single difficulty is undoubtedly the very narrow horizontal space limits, to overcome which facilities are provided for, practically multiplying it at different elevations, and for the most rapid handling of materials in the vertical direction. Instead of following each other, many different operations are executed simultaneously, and sometimes the same operations are in progress at many different places at once.

Little or no space is available for storing or for mechanical operations. The 50,000 tons of structural material which may be required are delivered to the site piecemeal as used, and hardly more than a day's supply is maintained in reserve at the site, thus necessitating a very accurate and complete adjustment of orders and deliveries, often with a supplementary storage, and constant inspection and reports of the progress of the materials during manufacture and in transit.

Delivery of Materials.

So far as possible, all materials are completely manufactured or fabricated before delivery at the site, and portions of the construction work itself are done at the contractor's yards. Daily conferences are held between the superintendents, foremen, sub-contractors, and dealers who determine for the next day the hundreds of truck-loads of materials and supplies that are daily delivered, inspected, checked, and distributed through the building. Some pieces, like caissons and heavy steel members, requiring special trucks and many teams of horses to handle them, are delivered at night or on Sundays, to avoid unnecessary obstruction of the streets and escape the heavy traffic obtaining during business hours. Most of the structural steel work and other large and heavy materials is hoisted from the street by the large derricks which unload trucks, allowing them to pass on, and delivering their loads approximately where required in a period of a very few minutes. Other materials like brick, broken stone, cement, etc., are quickly chuted into the cellar, raised to the required level by fast-running elevators or hoists and distributed by wheelbarrows.

Starting Construction.

Construction is started successively in the three principal parts, the substructure, superstructure, and installation of equipment. Sometimes explorations of the soil to determine the nature of the foundations are made by borings in the cellars of the old buildings before the tenants vacate them, thus saving several weeks' time. As the old buildings are emptied, wrecking contractors carefully remove doors, windows, metal work, and other materials of value, to a place of storage, and demolish the floors and walls from the top down, delivering the rubbish through wells to the lower storey and thence through covered chutes to trucks that remove it as soon as the site is cleared. It is often necessary to support the walls of adjacent buildings on new foundations carried to rock or to guard against their settlement when undermined by sinking new caissons through the adjacent quicksand. This difficult and costly work may be executed from the old building alone, from the new lot alone, or from both, sometimes involving constant attention and continual adjustment of high walls weighing 50,000 lb. or more per linear foot during the entire progress of the foundation work.

Costly Foundations.

Caisson foundations which may easily cost ten per cent. or more of the total cost of the building are sunk to rock in a few weeks by a very heavy and costly installation and pneumatic plant, which covers so much ground that materials are piled high all over the excavation and on auxiliary second-storey platforms, and often have to be moved again and again to make way for successive operations, thus conside ably increasing the cost and difficulties the work. Often the general excavati is not completed until after the foundatio are finished and sometimes not until mu of the steel work is erected, and very hea temporary bracing and sheeting are oft required to retain the sides of the excav tion and protect the street.

The Superstructure.

The construction of the superstructu commences with the erection of the ste work, which may progress at the rate 1,000 tons per week, and is handled excl sively by long and powerful derrick boom which command the whole area and th adjacent streets, unloading the material erected. The floors and walls are bui simultaneously, while riveting, paintin and fireproofing follow close behin Steam, electric and pneumatic power a provided wherever they can save time labour.

As the superstructure progresses, mai for water supply, sewerage, and electr service are laid, and as soon as the lowe floors are ready the installation is commenced of the very elaborate power plan heating, ventilation, elevator service an other equipment of the building, whic together with the structural finish, decora ing, etc., involve scores of subcontracto with conflicting interests simultaneousl working in very restricted areas. That it accomplished so rapidly, harmoniousl and successfully is due to the accuracy an completeness of the architectural and e gineering designs, the experience and r sources of the contractors, and the highl trained ability of the superintendent aided by competent assistants and a regular system of inspection.

AN ELEMENTARY MANUAL OF REINFORCED CONCRETE CONSTRUCTION.*

Any work bearing the name of our co tributor Professor Henry Adams is sure t be distinguished by thoroughness an clearness in the text, and effectiveness i the illustration. "Reinforced Concret Construction in Theory and Practice," i the production of which Professor Adam has had the assistance of Mr. Ernest R Matthews, is no exception to this rule, bu within its scope as "an elementary manua for students," exhibits all these qualiti in full measure.

The book begins with a chapter whic while it is headed "History of Reinforce Concrete," gives but a few lines of histor proper, and then goes off somewha abruptly in the direction of practical discussion of such subjects a the uses and advantages of the materia its properties, constituents, and proportions. The strictly historical portio recalls that the principles of reinforce concrete construction appear to have bee understood by the Romans, who, in constructing the roof of a tomb, inserted int the concrete bronze rods crossing eac other lattice-wise, and who sometime reinforced concrete by inserting tiles an timber. It is also recalled that in 183 London, in his "Encyclopædia of Cottage Farm, and Villa Architecture," remarke on the possibility of strengthening concrete flat roofs by inserting a lattice-wor of iron rods; and that in 1840 M. Loui

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*Reinforced Concrete Construction in Theory an Practice. An Elementary Manual for Students an others. By Henry Adams, M.Inst.C.E., etc.; an Ernest R. Matthews, Assoc.M.Inst.C.E., etc. Wit illustrations. Longmans, Green and Co., 39, Pate noster Row, London. Pages xiv.+316, 8¾ins. b 6½ins., price 10s. 6d net.

onte took out a patent for a reinforcing
ing slab. The Vaux and Thuasné sys-
s of reinforced construction of floors
e in use at the latter date. Vaux used
nd rods hooked over wrought-iron flat
s, and Thuasné employed rods sus-
ded by means of stirrups from small
joists. In 1855, Wilkinson, a New-
le plasterer, took out a patent for
forcing concrete slabs by inserting a
work of flat iron rods, or, as an alter-
ve, the utilisation of old wire ropes. In
same year Coignet took out his patents
France and England. His aqueduct
the river Vanne is still in excellent
dition after more than fifty years of
In 1861 the Parisian gardener Monier
structed his tanks and tubs of rein-
ed concrete, and specimens of his work
of Coignet's were shown at the Paris
osition of 1867. There are now, it is
d, more than seventy systems in use.
he reasons why the material is so ser-
able are thus tersely stated: "It is
ause its strength, rigidity, durability,
tness, ability to resist vibration, and
fire-resisting properties, are unsur-
sed by any other material; it also in-
no cost in maintenance. Added to
e advantages are two others, namely,
it is an economical material to use as
rds initial cost, and that works can be
uted very rapidly where it is em-
ed." Reinforced concrete specialists
not very vehemently dispute any of
e claims, although they include at
t two statements which may admit of
ification. It is no doubt substantially
irtually true that a reinforced concrete
cture "incurs no cost in maintenance,"
the fact might perhaps have been
d less contentiously in some such less
lute phrase as "the cost of mainten-
is so slight as to be negligible."
ilarly, the claim with regard to initial
may possibly provoke denial, which
d perhaps be speciously supported by
ific instances. There is no need to
gerate the virtues of reinforced con-
.

urning to matters of more practical im-
ance, the authors detail, with such
mendable brevity that the facts leap
e eyes, the properties of reinforced
rete, its constituents, and the most
oved methods of applying it. In
ing, it may be noted that in America
is known as a wet mixture is invari-
used, whereas English engineers and
itects do not look with favour upon a
mixture, but as a rule advocate a
ic mixture, and less often a dry mix-
; and we gather that the authors of
book favour a plastic mixture which
quake under a moderate amount of
ing; "but in reservoir work, or any
that is to be watertight, a wet mix-
may be used. In fact, wetter mix-
s are now used than formerly. In work
h is to be fireproof, as in the case of
chimneys, a dry mixture should be
."

neral principles of stress are dealt
in chapter ii., moments of resistance
loads and reinforcement in chapter iii.
successive chapters deal respectively
notation, formulæ, and examples;
al constructions; effects of excessive
on concrete and reinforced concrete;
voir and tank construction; reinforced
rete in railway engineering; in
ves, jetties, and the like; and in
ing construction; whilst the final
ter deals with a variety of minor
ers, including the waterproofing and
ring of concrete, and the finishing of
ces, the action of acids, sea-water,
ge, etc., on concrete.

The illustrations, of which there are 324, give views of a considerable variety of actual work in progress, the elements or units of the systems of reinforcement that are best known in this country are shown; and the general principles of stress, and other matters requiring elucidation by means of diagrams, are freely supplemented by graphic examples.

SLAG AND PORTLAND CEMENT.

Commenting upon an article that appeared in the "Times Engineering Supplement" some time ago, the British Humboldt Engineering Company, Ltd., now write a letter to that journal conveying interesting particulars with regard to tests of slag Portland cement in Germany.

The order issued by the Prussian Ministry, they write, according to which iron Portland cement (a cement consisting of 70 parts of Portland cement and 30 parts of ground, dried blast furnace slag) shall be considered fully equal to pure cement, raised the greatest interest through the industry in Germany, especially as the decision in this important question was based on a large number of tests carried out at the request of a commission of the leading experts by the Royal Office for Testing Materials (Königliches Materialprüfungsamt).

As the practical experience in the use of iron Portland cement has further given most excellent results in Germany, the iron Portland cement industry has developed strongly, and just at the present time several large works are being built, for instance at the North German Foundry, Bremen, and the Blast Furnace Works, Herrenvyk, near Lübeck. The cement works of the North-German Foundry are being constructed with the latest improvements by the writers' firm, and will start running at the beginning of next year. Besides the manufacture of iron Portland cement, a new process of making cement out of blast furnace slag has been extensively taken up in Germany.

It was found that a large number of slags furnish an excellent cement with the addition of only 10-20 per cent. of Portland cement and a small quantity of gypsum. Suitable slags attain by this process the full properties of pure Portland cement hardened in air or soft water. But in water containing salt and in sea water the same have proved much better than pure Portland cement, which is very often destroyed by immersion in salt water. The blast furnace cements behave entirely differently from the slag cements which were formerly brought into the market, and which consist of 70 parts of ground slag and 30 parts of hydrate of lime. This cement, the slag cement, was but little taken up in either Germany or England, as it did not stand well the exposure to air and immersion in sea water. The cement factory of the Royal Bavarian Foundry Works, Amberg, which was built by the British Humboldt Engineering Company, attained such excellent results that the Government has now decided to double the capacity of the cement works.

In making iron Portland cement and blast furnace cement, the chief thing is only to use slag that has been cooled as quickly as possible either by running into cold water or by spraying with water or air. Spraying with solutions of salt, such as was recommended both in Germany and England, was not taken up, as it was found that the salt does not change the slag, but that the use of clean water renders the same service. The chemical composition of the slag is not of so much importance as was formerly assumed. It should, however, be noted that only those slags should be used for making cement which have a certain minimum of lime and magnesia. Sulphur combinations in the slag are detrimental only if the slag is not cooled quickly but allowed to cool down slowly in the air. It will be taken for granted that the same care has to be exercised in the manufacture of iron Portland cement and blast furnace cement as in the manufacture of Portland cement.

That slag represents a "variable material" is correct only in so far as slags from different blast furnaces have different properties. The slag of one and the same blast furnace varies essentially only when different sorts of iron are produced in the same furnace.

From the above it will be seen that the use of blast furnace slag has taken a very large and profitable extension in Germany, while formerly it was a troublesome refuse, and the writers hope that the English iron and steel industry will apply itself more energetically to this profitable auxiliary work than hitherto.

THE STEEL DOME OF THE BOSTON STOCK EXCHANGE.]

The spherical dome of the Boston Stock Exchange is about 54ft. in extreme diameter, and 100ft. high from grade to the top of the finial. It has double segmental shells supported from the upper and lower chords of 16 riveted trusses in radial vertical planes. The outer shell is surmounted by a lantern about 12½ft. in diameter and 5ft. high, with a copper roof and glazed windows in the sides. It is seated on a circular terra-cotta wall with a steel framework, which forms a clerestory about 4ft. high about the main roof, and is pierced with glazed windows.

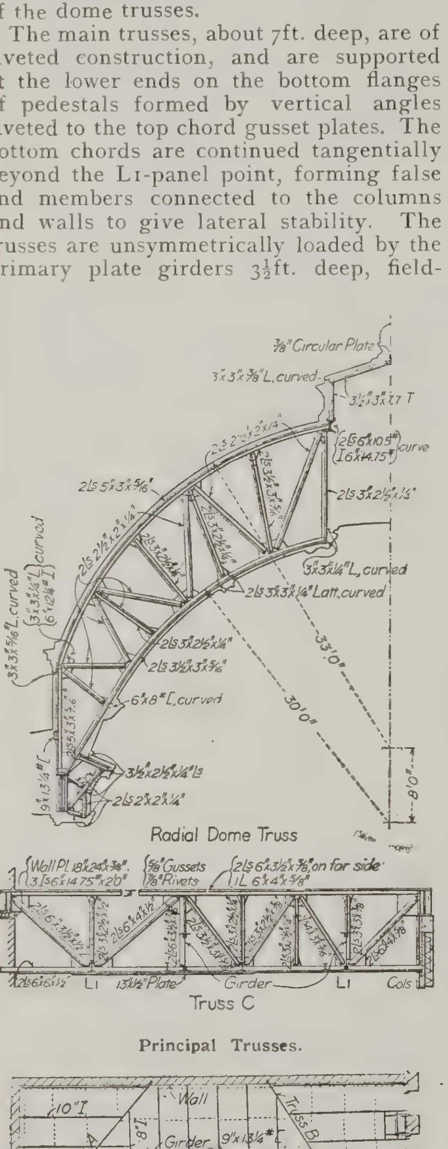
Except for small spaces at the top and bottom which are sheathed with copper, each panel of the outer shell consists of a skylight glazed with hammered plate glass set in a galvanised iron frame. The inner shell is glazed throughout with pattern glass set in galvanised iron frames, and the trusses and purlins are covered with plaster mouldings which form ribs enclosing the panels. Below the bottom of the exterior shell the glazing of the interior shell is replaced by open galvanised iron grilles providing ventilating registers for the passage of air to the exhaust chamber between the two shells. Below the grilles there are heavy circular mouldings forming a cornice around the opening in the main ceiling.

The dome construction is carried by a system of plate girders, supported by two main walls in the building 88ft. apart in the clear, by a transverse connecting wall and by two steel columns 11ft. each side of the centre line of the dome in a transverse plane 70ft. from the transverse wall. Four trusses, A, B, C, D, with their top chords at main roof level, have two supports on the columns, and the other six supports on the walls, with portions of which they form sides of an octagon exterior to the circular walls of the outer shell.

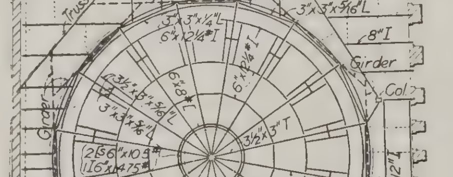
Eight plate girders web-connected to the exterior trusses form an octagon circumscribing the dome about in the plane of its circular wall, and approximately parallel to the exterior octagon made by the trusses and walls. Two radial trusses are seated on the top chord of each of the octagonal girders.

The top chords of the radial trusses are connected at the centre by a horizontal drum with an H-shape cross-section made of an I-beam and two channels which also supports the lantern. The upper ends of the lower chords are connected by two circular horizontal angles, and both top and bottom chords are connected by several intermediate struts made by curved horizontal angles, I-beams and channels as indicated in the elevation of the truss. The framework of the lantern consists of light vertical tees in the planes of the dome trusses.

The main trusses, about 7ft. deep, are of riveted construction, and are supported at the lower ends on the bottom flanges of pedestals formed by vertical angles riveted to the top chord gusset plates. The bottom chords are continued tangentially beyond the L1-panel point, forming false end members connected to the columns and walls to give lateral stability. The trusses are unsymmetrically loaded by the primary plate girders 3½ft. deep, field-riveted to vertical members as indicated in the drawings on this page.

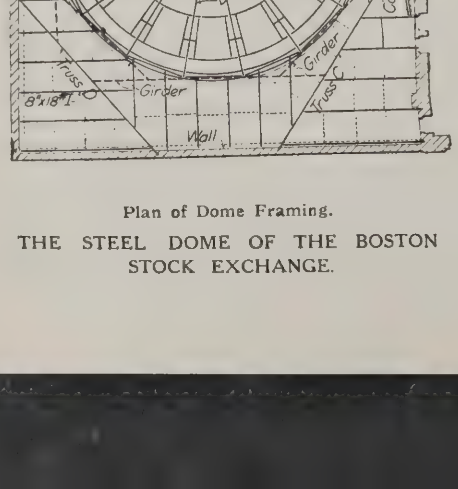


Radial Dome Truss


Wall Pl. 18"x24"x3/4". 3 I's 6"x14.75#x2'0"
5/8" Gussets 7/8" Rivets
2 ⅃s 6"x3½"x3/8", on far side 1 L 6"x4"x5/8"
2 ⅃s 6"x6"x½"
L1
13"x½" Plate
Girder
L1
Cols

Truss C

Principal Trusses.



Plan of Dome Framing.

THE STEEL DOME OF THE BOSTON STOCK EXCHANGE.

The radial dome trusses are 10½ft. deep and all their members have T-shape cross-sections made of pairs of angles back to back. The top chord is curved to a radius of about 63ft., and the bottom chord to a radius of about 30ft., except at the lower end, which is a straight tangent about 12ft. long. The horizontal members connected to the lower chords serve both as braces and to support the ornamental plaster ribs of the interior panelling. Angle iron brackets are attached to the lower ends of the bottom chords and to the octagonal girders to support four lines of curved horizontal angles forming a circular framework for the steel furring of the heavy ceiling cornice.

Peabody & Stearns were the architects. The steel was fabricated and erected by the New England Structural Co. for L. P. Soule & Co., builders.

L.C.C.'S PROPOSED REGULATIONS FOR REINFORCED CONCRETE BUILDINGS.

The Building Acts Committee of the London County Council have now drafted their proposed regulations with respect to the construction of buildings wholly or partly of reinforced concrete, and with respect to the use and composition of that material. From this draft we make the following extracts. The power to make these regulations is derived from the provisions of Section 23 of the London County Council (General Powers) Act, 1909:—

PART I.

GENERAL.

1.—Reinforced concrete the subject of these regulations shall be concrete reinforced by metal so combined that the metal will

(a) be sufficient to take up all the tensile stresses;

(b) assist in the resistance to shear;

(c) assist in the resistance to compression where necessary;

and where the term "reinforced concrete" is hereafter used in these regulations it shall mean concrete reinforced as aforesaid.

2.—The skeleton framework of reinforced concrete of a building together with the party wall or party walls (if any) upon which such framework bears shall be capable of safely and independently sustaining the whole dead load and the superimposed load bearing upon such framework and party wall or party walls.

3.—All floors and staircases (together with their enclosing walls) shall be constructed throughout of fire-resisting materials and be carried upon supports of fire-resisting materials.

4.—In the case of the erection of a new building of reinforced concrete or the making of any addition or alteration or the carrying out of other work under the provisions of these regulations the notice required to be served on the district surveyor under section 145 of the London Building Act, 1894, shall be accompanied (a) in the case of a new building by plans and sections of sufficient detail to show the construction thereof, together with a copy of calculations of the loads and stresses to be provided for and particulars of the materials to be used; and should such plans, sections, calculations or particulars be, in the opinion of the district surveyor, not in sufficient detail, the person depositing the same shall f nish the district surveyor with such f ther plans, sections, calculation or p ticulars as he may reasonably requi and (b) in the case of an alteration addition or other work as aforesaid such plans, sections, calculations a particulars as the district surveyor m reasonably require.

5.—Nothing in these regulations sh be deemed to authorise the construct of buildings of reinforced concrete which the loads and stresses are transmitted through each storey to foundations by a skeleton framework f reinforced concrete or partly by a ske ton framework of reinforced concrete a partly by a party wall or party walls.

PART II.

DATA.

Floor and Roof Loads.

6.—The dead load of a building sh consist of the actual weight of wa floors, roofs, partitions and all other p manent construction comprised in s building.

7.—The superimposed load in resp of a building shall consist of all lo other than the dead load.

8.—For the purpose of calculating loads on foundations, pillars, piers, wa framework, beams and other constr tions carrying loads in buildings, superimposed load on each floor and the roof shall be estimated as equival to the following dead load:—

9.—For a floor intended to be u wholly or principally for the purpose artizans' dwelling, domestic purpo human habitation or private dwelli house, equivalent dead load in poul per square foot is 70; for asylum wa common lodging-house bedrooms, h pital wards, hotel bedrooms and wo house wards, it is 84; for counting hous offices, and other similar purposes, for art galleries, chapels, churches, cl rooms, concert rooms, lecture roc library reading rooms, meeting roo music halls, public assembly, retail sh theatres, workshops, it is 112; for rooms, drill rooms and similar floors ject to vibration, 150; for book store libraries, museums, and warehouses,

10.—In every building of the wareh class a notice shall be permanently hibited in a conspicuous place on storey of such building stating the m mum superimposed load per square which may be carried on any part of floor of such storey.

11.—For a roof the plane of w inclines at a greater angle than tw degrees with the horizontal, the su imposed load, which shall for this pose be deemed to include wind pres and weight of snow and ice, shal estimated at twenty-eight pounds square foot of sloping surface norma such sloping surface on either sid such roof.

12.—For all other roofs the supe posed load shall be estimated at fift pounds per square foot measured horizontal plane.

13.—Provided that if the superimp load on any floor or roof is to ex that hereinbefore specified for such or roof such greater load shall be prov for.

14.—Provided that in the case of floor intended to be used for a purpos which a superimposed load is not spec in these regulations, the superimp ad to be carried on such floor shall be ovided for.

15.—For the purpose of calculating the tal load to be carried on foundations, llars and walls in buildings of more an two storeys in height, the superim- sed loads for the roof and topmost rey shall be calculated in full, but for e lower storeys a reduction of the super- posed loads shall be allowed as fol- ws:

16.—For the storey next below the top- ost storey a reduction of ten per cent. the calculated superimposed load shall allowed; for the next storey twenty r cent.; and so on by increments of ten r cent. per storey till the reduction nounts to 50 per cent. It shall be taken 50 per cent. for all floors below.

17.—No such reduction as aforesaid all be allowed in the case of a building the warehouse class.

Wind Pressure.

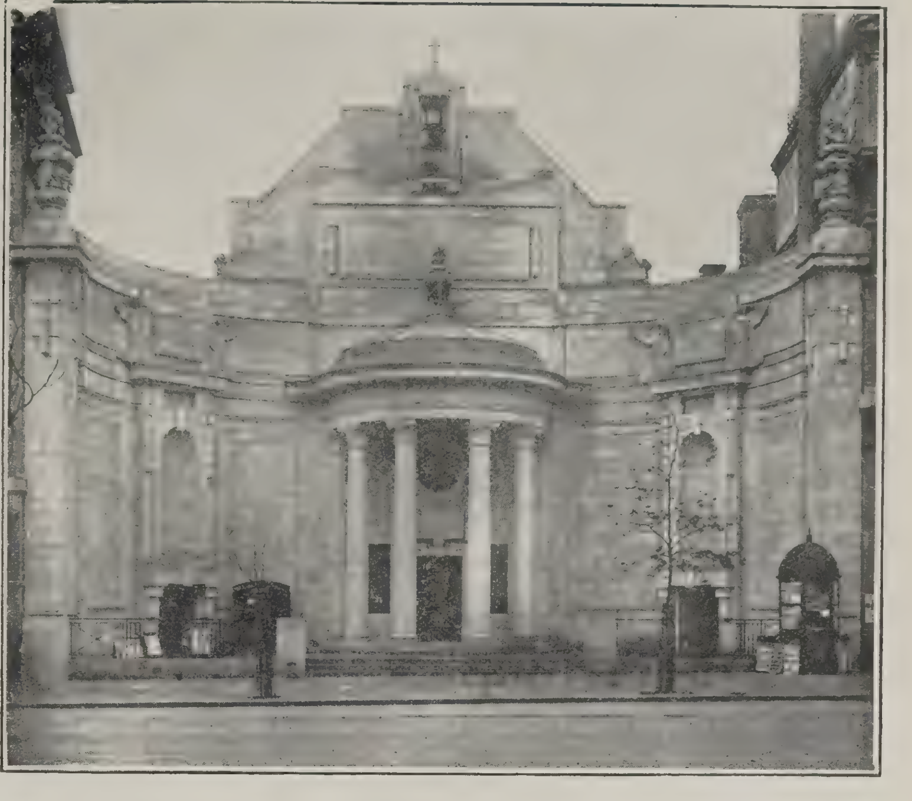
18a.—All buildings shall be so designed to resist safely a wind pressure in any rizontal direction of not less than enty pounds per square foot of the ole projected surface normal to the rection of the wind.

18b.—All structures or attachments atsoever in connection with a building, cluding towers or other parts which ex- d above the roof flat or gutter adjoin- g thereto, shall be so designed as to sist safely a wind pressure in any hori- ntal direction of not less than forty unds per square foot of the whole pro- ted surface normal to the direction of wind.

Weights.

19.—In calculating the safe load on ams and floor slabs allowance shall be de for the weight of the beam or floor b itself.

20.—For the purposes of calculation, weight of reinforced concrete shall be en at 150 pounds per cubic foot.



HOLY TRINITY CHURCH, KINGSWAY, LONDON. JOHN BELCHER, R.A., AND J. J. JOASS, F.R.I.B.A., ARCHITECTS.

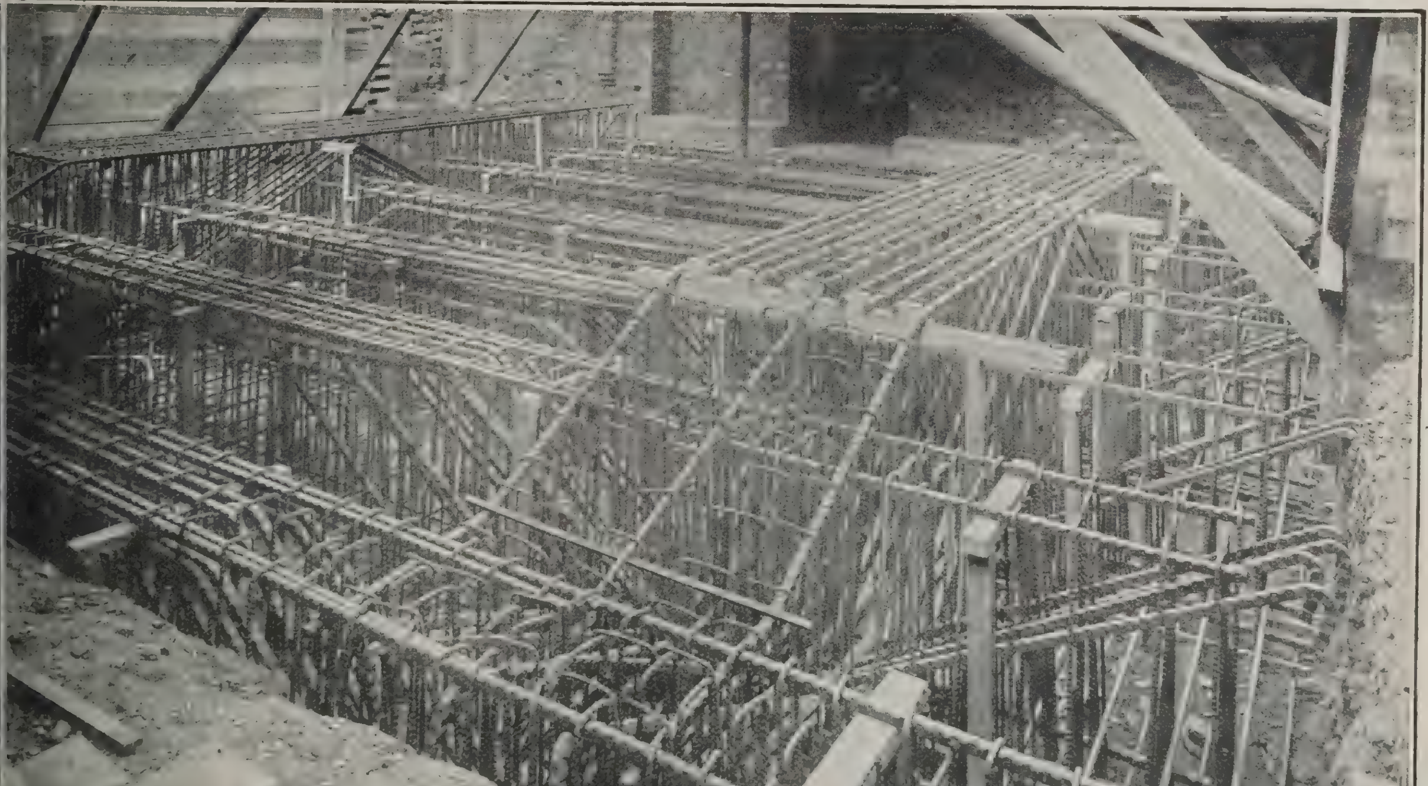
Ratio of Span to Depth of a Beam.

21.—For the purpose of determining the ratio of span to depth of a beam, the effective depth of the beam shall be taken.

22.—The effective depth is to be measured from the compressed edge of the constructional concrete to the common centre of gravity of the tensile reinforcement.

23.—The span of a beam shall not exceed twenty-four times the effective depth of the beam unless the calculated deflection of such beam is less than one six-hundredth part of the span.

Paragraphs 24 to 32 deal with bending moments; paragraphs 33 to 46 with working stresses, modulating ratio, etc. These recommendations will be dealt with in a future issue.



VIEW SHOWING REINFORCEMENT OF FOUNDATION RAFT FOR HOLY TRINITY CHURCH, KINGSWAY, LONDON.

FOUNDATION RAFT OF HOLY TRINITY CHURCH, KINGSWAY.

The foundations, of which a view is here shown, are for a raft supporting a tower which is calculated to weigh eventually 2,500 tons. The tower, however, is at present arrested at the level of the main roof. Its four columns are carried on reinforced concrete foundations, which, as well as the raft supporting the tower and the entrances, are all reinforced by Indented Steel Bars, by the Patent Indented Steel Bar Co., Ltd., Queen Anne's Chambers, Westminster. The architects are Messrs. John Belcher, R.A., and J. J. Joass, and the consulting engineer is Mr. Alexander Drew, M.I.Mech.E.; the contractors being Messrs. G. Godson and Sons.

CEMENT CONSOLIDATION SCHEME.

For some time past there have been more or less vague rumours of a coming amalgamation of certain cement-producing businesses in this country; and now it is stated, in the "Financial Times" of December 1st, that at the interim general meeting of Martin Earle and Co., held on the 22nd ultimo, the directors submitted a proposal that the shareholders should agree to exchange their holdings for the capital issues of a new concern.

"In the circular issued last month to the shareholders in connection with this matter," our contemporary observes, "the directors stated that they had been approached by certain important interests who were intent upon the carrying through of a consolidation scheme, which should result in the formation of a new company. . . . capitalised at between £3,000,000 and £4,000,000, while the capacity of the various plants to be acquired was estimated at something over 1,200,000 tons. The name of the new undertaking will be the British Portland Cement Manufacturers. . .

"One of the chief points in favour of the scheme of consolidation," the "Financial Times" states, "is that it will entail in many cases a substantial reduction of the capital of the concerns taken over, and, while this may not be a very agreeable process for those who have to submit to it, the result will be to put the finances of the trade on a sounder footing than at present. . . . The desirability of organising the industry on this basis has been apparent for some years, and it is now probable that the negotiations to this end will be completed during this month. It will then remain for foreign producers to decide upon their line of action, unless, as many people believe will be the case, an understanding is arrived at with them in the interval."

REINFORCED CONCRETE SWIMMING BATH AT CHEADLE HULME.

The accompanying illustration shows the new swimming bath erected in connection with the Warehousemen and Clerks' Orphanage at Cheadle Hulme, near Manchester.

The bath is built of reinforced concrete, and has been waterproofed with 1 in. cement rendering, mixed with Ceresit, by the use of which it becomes absolutely water-tight.

The architects are Messrs. W and J. Higginbotham, of Market Street, Manchester, and the work has been carried out by the Combined Concrete Construction Co., Ltd., of 25, Strutt Street, Manchester.

Ceresit is a cream-white paste, which dissolves readily in the water used in mixing concrete or cement mortar. By this method the Ceresit is uniformly distributed through the aggregates, thus filling the voids and giving greater density and strength to the concrete and mortar, and rendering it absolutely impervious to water or dampness even when subjected to great hydrostatic pressure. The material protects concrete and cement, and being itself an integral part of the mass, cannot crack or be chipped off; nor does it darken the cement. The beautiful Italian pool in the Country Life Gardens, Garden City, Long Island, is waterproofed with Ceresit, which is being extensively used in Great Britain—for instance (to cite only a few examples) in the construction of Conisborough reservoir; of the engine pit at large woollen mills near Bradford; of the Heeley Swimming Baths, for the Sheffield Corporation, and especially in a Russian Bath therein, where it has prevented the mortar from falling away from the glazed brickwork; at the Golf Club House, Wortley; and in many other important buildings in the United Kingdom. It is supplied by the British Ceresit Waterproofing Co., Ltd., 68, Victoria Street, London, S.W.

REINFORCED CONCRETE SWIMMING BATH AT CHEADLE HULME, NEAR MANCHESTER.

NEWS ITEMS.

Change of Title.

The reinforced concrete busi hitherto carried on under the name James H. Tozer and Son, Ltd., is being conducted by G. F. West and of Caxton House, Westminster.

Victoria and Albert Museum Librar

The Board of Education give notice the Library of the Victoria and Al Museum will be closed from Decem 12th, 1911, to January 20th, 1912, in sive, for cleaning, re-lighting and gen renovation.

Reinforced Concrete Sleepers.

Messrs. D. G. Somerville and Co. 116, Victoria Street, and Archa Works, New Cross, have just shippe South America the first consignmen a large order of reinforced conc sleepers which they have in hand for of the railways there.

Cement Trade Pioneer.

The death of Mr. Isaac Charles J son, J.P., of Gravesend, took place November 30th. The deceased, who brated his hundredth birthday last J ary, opened the first cement works on Medway, and also established work the Tyne.

Glasgow's Municipal Buildings.

In a minute prepared for submis to the Glasgow Town Council, the M cipal Buildings Committee recomme that the borrowing powers of the poration for the purposes of the Mu pal Buildings Act, 1878, be incre from £650,000 to £860,000. These tional powers are required for the ment of the purchase price of the perties on the east side of John S and south side of George Street, rec acquired by the Corporation; and to the cost of such buildings (including nishings) as the Corporation may res to erect upon the land belonging to on the east side of John Street bet Cochrane Street and George Street cluding the sites of the properties.

"Should We Stop Teaching Art?

Mr. Batsford will shortly publish a by Mr. C. R. Ashbee entitled "Shoul stop teaching Art?" The volume is p the outcome of the recent findings o Departmental Committee of the Royal lege of Art, and Mr. Ashbee, who is known for his practical interest i workers, pleads for the organisatio craftsmen throughout the country, an financial assistance from the State t able them to combat successfully decentralising influences upon their resulting from uncontrolled mecha Mr. Ashbee offers a solution of the culty which should be of considerabl terest to all concerned in the welfa the arts and crafts, and his attempt to public attention to the serious effe mechanism in the last ten years upo quality of our national output in the upon the organisation of our schools, upon the lives of our craftsmen, wi appreciated by many.

NCHESTER SOCIETY OF ARCHITECTS—ANNUAL DINNER.

Manchester Society of Architects heir forty-eighth annual dinner at idland Hotel, on November 29th. dgar Wood, F.R.I.B.A., president society, was in the chair, and the included Sir Ryland Adkins, Mr. Leonard Stokes, president A., Mr. Paul Ogden, F.R.I.B.A., Ir. G. Macfarlane, of the National ation of Building Trades Employers at Britain and Ireland.

Edgar Wood on Official Architects.

r the loyal toasts had been hon- the Chairman proposed "The Institute of British Architects." reference to official architecture, ood said the policy of public bodies direct encouragement if not a for a system which it had ever been sire of the best architects to obliter- ever. The chairman in coupling ame of Mr. Leonard Stokes, paid m tribute to the work of that gen- for the society.

Leonard Stokes on Abortive Competitions.

Leonard Stokes, in reply, made a nce to the Infirmary site question, ped the Corporation did not think chitects went into competitions for Before a Corporation asked men nd time and money in sending in s, they should seriously make up minds that they wanted the thing asking for it. The Infirmary site be left as an open space, and that might or might not be the hing, he thought it would cause a deal of heart-burning among men ad thought they had won prizes nade reputations to find people their minds. It was unfair to cts as a profession that people in hearted way should ask for a com-

Roger Oldham submitted "Our Towns," to which Sir Ryland , M.P., replied.

yland Adkins on Town Planning.

Ryland said the proposing of such like that was one more striking of the large and varied way in a new civic idea was permeating inds of English people. A few ago only visionaries spent much ver ideas of town planning. Dur- last few years a definite re-organi- of our towns and cities had become real and pressing problem, and gaging the minds of people of all a way which he thought was most ing and most hopeful, if not for nediate, for the yet not far distant No new development of the lea could be either fruitful or com- nless it included the artists as the politicians, and the workmen l as the commercial men. A as not a conglomeration of tem- covers for humanity in the inter- its work. If their future towns be what they wanted them to be ust display that variety and indi- y which was essential if the towns country in the future were to e vigour they would like, if they develop to the full that passion -government and that encourage- f individualism which they ought to do if they were to be the strength to the nation that they wanted them to be. In that variety no one could help more than the architects of England.

Mr. Paul Ogden on the Builder's Craft.

Mr. Paul Ogden, in proposing the toast of "The Master Builders' Federation," said: Let us hope that we are not losing all the old-fashioned builders, the men who took a keen interest in their craft, and who did not live solely for the financial side, as is the practice of a certain percentage of the modern builders. But there is a tendency, nowadays, to look solely to the profit-making side of building; and so keen is competition that architects and clients alike wonder how a living can be made, judging by the tenders, which give very little margin for profit. If we could employ builders as architects are employed, by selecting them and paying them a percentage on the outlay, might we not hope to return to the old state of affairs, when builders would take a keen interest with the architect, as mutual workers towards a more perfect result? I have tried this method upon four occasions, with every satisfaction, and upon one occasion after having obtained tenders, which resulted in a saving of about one per cent. You would be allowed to change your mind and your builder during the progress of the work without running your head against any complicated legal squabble. With the builders we sympathise. We architects are not infallible, and should not expect builders to be so, even if such is expected by the client. The same will apply to the men. But architects have at least this comfort, that their societies do take a lively interest in architecture and its practice. I know of no trades union that exists for the benefit of the improvement of the craft it represents. The men's leaders, so far as I am able to gather, do not busy themselves with anything but the financial side, and the bettering of the conditions of employment. It may be that the social side has swallowed up the side belonging to the betterment of the craft. We might plead that a little more interest should be taken in pure craftsmanship. It is useless raising wages when such only reduces the purchasing power of money. If the cost of building houses is increased, one must expect the rents to be higher. These are matters which do not affect architects directly, and are perhaps slightly out of place in the present gathering; but as strikes and disputes with builders make the times more distressing for the building trades throughout, we may offer our sympathy to all classes in the building trade, and trust they may find a happy solution for all their difficulties. I cannot help thinking, on an occasion like this, of Douglas Jerrold's remark that 'men are very good at minding other people's business, but their own sometimes troubles them.' I have every pleasure in asking you to drink to the toast of the 'Master Builders' Association of Manchester and Salford,' coupled with the name of Mr. George Macfarlane."

Mr. G. Macfarlane on the Parlous State of the Builder.

Mr. G. Marfarlane said: It is with some temerity that I rise to respond to the toast of "The Builders." The crucial times through which the building trade is passing are so serious and depressing that a toast is hardly in keeping with the gravity of the situation. He would be a daring man who would say that builders were a thriving and prosperous body. Instead of prosperity, adversity has been dogging our footsteps for years. It is well known to you all that more builders in the Manchester district have succumbed through trade difficulties during these last few years than has ever been known before within the memory of any one of us: not small builders, not speculative builders, but firms who have done the most of the work and the best of the work that has been carried out in this city, whose workshops were the best equipped and whose workmen were equal to any task the builder's craft could demand. When such calamities happen, it gives one great searchings of heart as to what may be in store for those who are left. When the giants of the forest fall, the lesser ones are bound to be shaken. As an index to the vicissitudes of the building trade—of the firms that were in existence in Manchester when I started business forty-five years ago—there are none that I know of left. This is no pleasant circumstance to look back upon. Some one has said that the victory lies in the struggle, not in the prize. Well, there is no doubt about the struggle as far as builders are concerned, but most people hope for some reward. It is the hope of reward that sweetens labour. Men like to win and to be on the winning side. I am sometimes tempted to ask myself the question, "Is it possible under the adverse conditions that now prevail in Manchester to become a successful builder?" Scotch folk used to talk about the "fundamentals" in religion. There are fundamentals in business as well as in religion. One of the fundamentals in business is business profit. Without profit, business transactions lead to disaster and failure. I am just afraid that latterly the attempt is being made to run the building trade in this city without any profit, which is an impossible feat. I am not blaming anyone. Trade has been so scarce that men have to face one of two evils, either the loss of standing plant and empty premises, or that realised through undertaking work at unremunerative prices. We are, as it were, "between the devil and the deep sea." Thus we have builders contending with one another in the questionable practice of cutting one another out. I am very pessimistic at present. I feel that we have arrived at a parlous stage in our history, and I am sure that all fair-minded architects must deplore the evils which now prevail. How to stop this foolish stampede is the problem. You may tell me justly that the remedy is in the hands of builders themselves; but until a more common-sense spirit is induced amongst all concerned, things will go on from bad to worse. The life of a conscientious builder is a strenuous one; constant, unfaltering vigilance is his daily task. No business I know of is so beset with complications from unforeseen things cropping up—the unexpected is always happening. A builder of large experience once said to me that a builder's life consisted mostly of obligations, with but very few rights. Certainly no set of men so readily sign their rights away and bind themselves hand and foot to carry out impossibilities as builders do. It would be a good thing if some means could be adopted whereby the squaring up of jobs could be accelerated. In many instances it takes years—not to do the squaring up, but to grasp the nettle and make a genuine start. There are, no doubt, some cases where special difficulties arise and where delay is not altogether one-sided; but six months after completion should give ample time for the various accounts to be adequately balanced. I have seen it somewhere seriously stated that inasmuch as retention money consists of builders' realised profit, there can be no practical injury caused by any delay in issuing the final certificate. Such inferences are fairy tales that builders would dearly wish to be true. Much hardship is occasioned by undue delays, and men are often thereby driven into straits they cannot weather. I have to thank you for your invitation to this dinner and also the proposer of the toast. It would be well if we could occasionally discuss together things of mutual interest from one another's standpoint. We are to some extent tied up in one bundle, members of one body, liable to suffer together and capable of rejoicing together, and it is well occasionally to realise that we are inter-dependent one upon the other.

Educating the Builder.

Mr. W. A. Hennings proposed "Technical Education," joining with it the name of Mr. J. H. Reynolds. The more an architect was an idealist, he said, must he in the future tend to lean more and more on those who had technical education, for the reason that their practice was becoming increasingly complex.

Mr. J. H. Reynolds, in reply, urged the need of a good general education before we began to apply a knowledge of the sciences. It was, he said, not so much the working men that they wished to get at, as those at the head of the great concerns. More than a thousand young men, said Mr. Reynolds, were studying at the School of Technology the sciences connecting with the building trade. Technical education, if founded on a superior general education, would bring to all concerned the greatest possible advantage.

LIST OF COMPETITIONS OPEN.

DECEMBER 30. WORKMEN'S DWELLINGS.—At the Eisteddfod, 1912, a prize of £50 will be offered for designs for workmen's dwellings. Apply to Welsh Housing Association, 9, Temple Chambers, E.C.

JAN. 1, 1912. INFIRMARY EXTENSION, ROCHDALE.—The Board of Management of the Rochdale Infirmary invite architects practising in Rochdale prior to January 1st, 1911, to submit plans, designs, and estimates for extending the present buildings. Conditions of competition and instructions to architects, together with other information can be obtained on application to T. Elvyn Kershaw, Secretary, the Infirmary, Rochdale. Mr. Alexander Graham, F.R.I.B.A., has been appointed assessor.

JANUARY 6, 1912. PUBLIC LIBRARY, STAFFORD.—The actual building is not to cost more than £4,000. Enquiries were to be sent to the Town Clerk, Stafford, not later than November 25, and designs must be sent in by January 6. The Borough Engineer states that applicants for particulars should have enclosed £1 deposit. Mr. Henry T. Hare, F.R.I.B.A., is assessor.

JAN. 6, 1912. CENTRAL HALL, OFFICES, AND CARETAKER'S HOUSE, BOLTON.—The Lancashire and Cheshire Miners' Federation invite architects in practice on their own account within a radius of 25 miles of the Town Hall, Bolton, to submit designs in competition for the above. The Committee of the Federation have appointed as assessor Mr. Jonathan Simpson, F.R.I.B.A., of Bolton. The premiums offered are £50 and £25 for the two best designs in order of merit as adjudged by the assessor. Conditions and instructions will be sent to architects on application to Messrs. Fielding and Fernihough, Solicitors, 7, Fold Street, Bolton, accompanied by a deposit of one guinea (which is returnable on fulfilment of conditions).

JANUARY 9, 1912. PUBLIC HALL, SPENNYMOOR.—Competitive designs are invited by the Spennymoor U.D.C. for a public hall, market, and offices.

JANUARY 20, 1912. STATUE AT HAVANA.—Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana, before January 20. The sum of 100,000 pesos (about £20,600) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., where also further particulars (in Spanish) may be seen.

JANUARY 29, 1912. GOVERNMENT PALACE, MONTEVIDEO.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640, and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

JANUARY 31, 1912. FEDERAL CAPITAL CITY, AUSTRALIA.—Competitive designs are invited by the Commonwealth of Australia, for the laying-out of the Federal Capital City. Premiums are offered as follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered by January 31st, 1912, to King O'Malley, Minister of State for Home Affairs, Commonwealth of Australia.

[The Institute of Architects of New South Wales and the R.I.B.A. have asked members and Licentiates not to take part in this competition unless the conditions are made more satisfactory. See our issue for November 8, p. 485, and article printed in the issue of November 22nd, p. 537.]

FEBRUARY 3, 1912. NURSES' HOME, BOLTON INFIRMARY.—Premiums, £30, £20, and £10. Mr. John B. Goss, F.R.I.B.A., has been appointed the assessor.

FEBRUARY 17, 1912. NEW OFFICES FOR THE PORT OF LONDON.—The Port of London Authority invite preliminary sketch designs for new head offices in Trinity Square, and for lay-out of a building site.

JULY 1, 1912. CITY EXTENSION SCHEME, DUSSELDORF. — Premiums £1,000 and £375. Particulars from the Chief Burgomaster, Dusseldorf.

LEEDS AND YORKSHIRE ARCH
TURAL SOCIETY.

At a meeting of the Leeds and
shire Architectural Society, hel
November 30th (the president,
Sydney D. Kitson, M.A., F.R.I.
in the chair), a very inter
paper was read by Mr. Alfred Ma
on "Old Leeds." He described its g
and development from a village up
city of the 19th century. Mr. W. H.
F.R.I.B.A., in proposing a vote of t
deplored the loss of many of the ol
torical fabrics so reminiscent of the
days, and remarked upon the Red
Guilford Street, which is at present
going drastic changes in the way of re
tion and alteration. The motion wa
ported by Mr. C. B. Howdill, A.R.I.
who spoke of the lack of civic spirit
in Leeds, especially with regard to
tectural development.

ARCHITECTURAL ASSISTANTS
OFFICE OF WORKS.

In the House of Commons Mr. Sn
asked Mr. Dudley Ward, as repres
the First Commissioner of Works,
was aware that there were a num
professional men engaged in the Of
Works who were termed archite
assistants and who possessed certifica
technical efficiency; that some of
were members of the Royal Instit
Architects, Surveyors' Institute, and
societies; that these men had bee
ployed for many years by the Boa
Works, but were still not established
would he consider their claims to be
on the established list.

Mr. Dudley Ward in a printed
stated that the answer to the
parts of the honourable Member's
tion was in the affirmative. With r
however, to the last section, the First
missioner was not at all sure that
was any general desire on the part of
gentlemen who might be consi
eligible to be placed on the estab
list, with the consequent sacrifice
come which would be demanded b
regulations.

Cardiff Master Builders' Associat

The monthly meeting of the committee
Association was held at the Association off
November 23rd. Mr. W. T. Morgan, the pr
in the chair.

Before proceeding with the business
agenda, it was unanimously resolved that
be sent to the Lord Mayor (Alderman J. W
tis), who is an honorary member, congrat
him on his election as Lord Mayor of the ci

The secretary submitted notices receive
the carpenters, wood machinists, masons,
layers, plumbers, and painters, for incre
wages, and alterations of working hours, and
resolved that notice of these demands be i
in the trade journals, and also in the local
and that we write to the various trades to
their representatives on the local conciliatio
mittee.

The secretary read a letter dated 11th
ber, 1911, from the timber importers, with
the association had been in communication
importers strongly defended the increased
charges complained of by us, and stated th
could not see that any useful purpose co
served by meeting a deputation, as suggested
and it was resolved that a reply be sent exp
our disappointment, and repeating the requ
a meeting to discuss the matter, and stati
in the meantime the members would be ins
to pay on the old rate only.

Mr. Charles Hoare, who attended as a repr
tive of the Cardiff and District Builders' A
tion (by invitation of the president), laid bef
meeting a proposal for the raising of a Joint
out of which prizes could be given to stud
building subjects in the technical schools
city, and the matter was fully discussed, and
resolved that the president, Mr. Hoare, a
superintendent of technical instruction, be
to prepare a scheme, and to submit same to t
meeting for approval.

The secretary submitted a letter from th
terers making complaints of alleged infrin
of rules by several members of the Associati
the complaints were carefully considered, a
secretary was instructed as to the replies
made thereto.—I. WATKINS.

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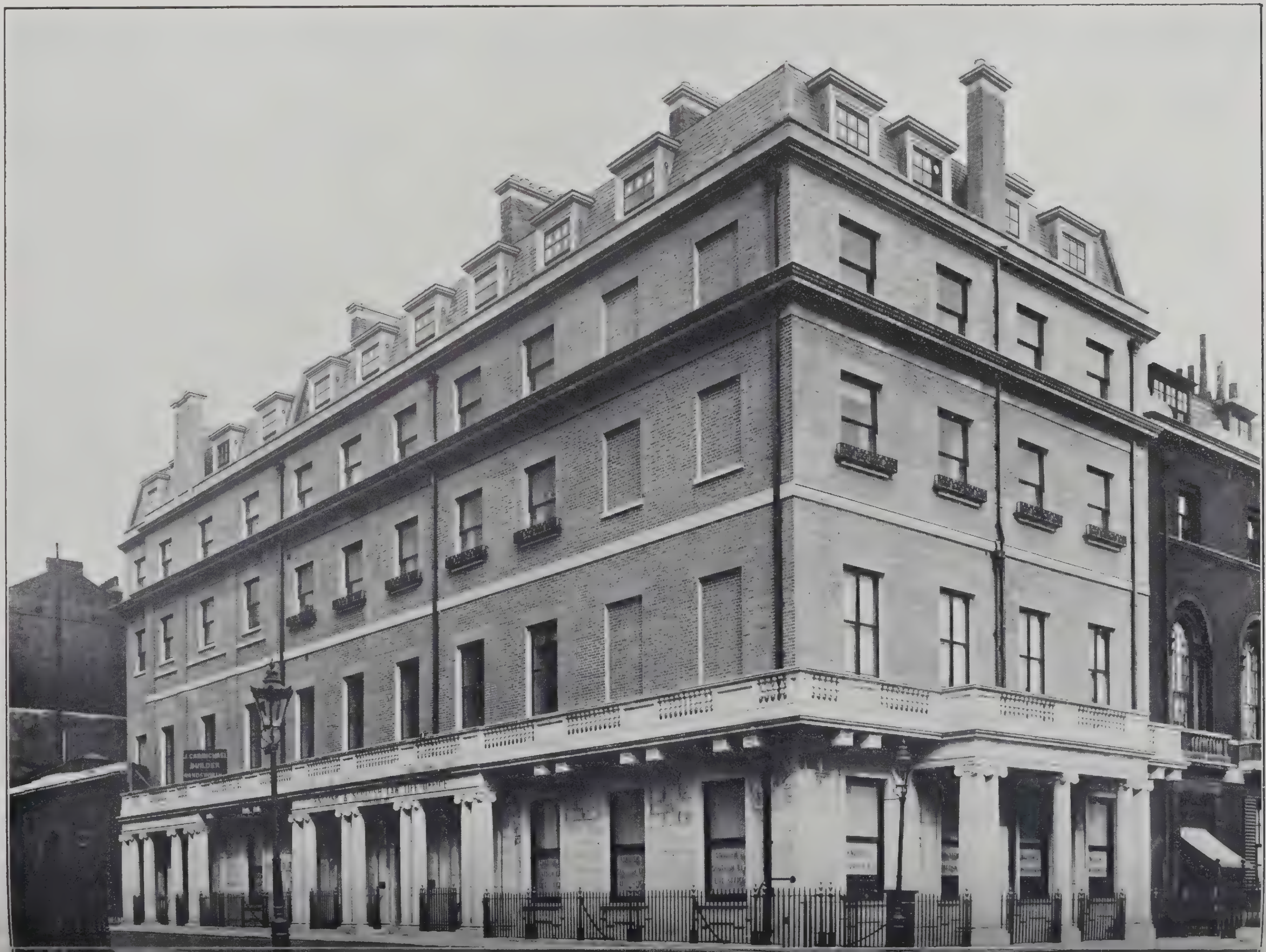
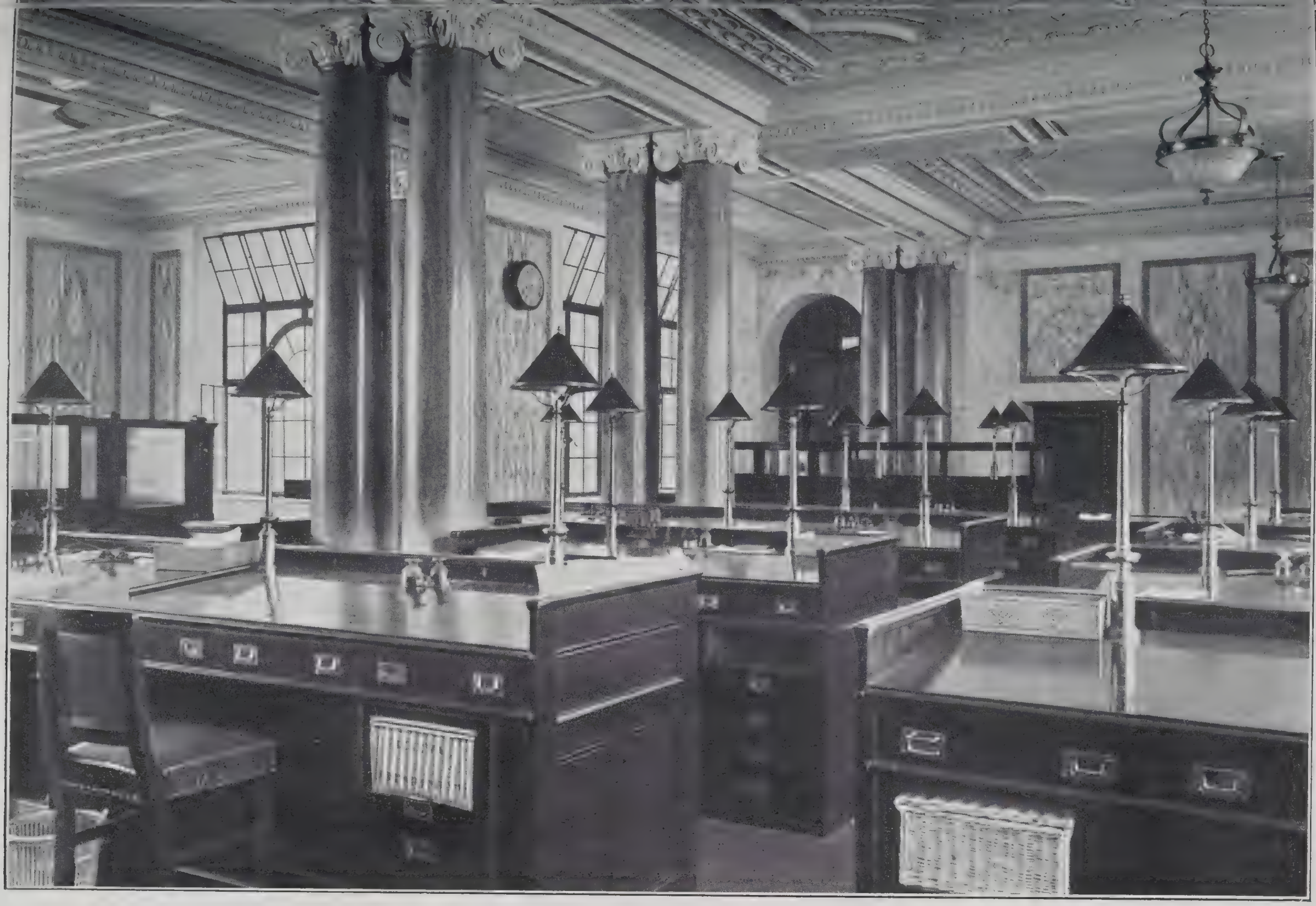
Supplement to The Architects' and Builders' Journal, *Wednesday, December 13th*, 1911.





General Office of the English and Scottish Law, Life, Assurance Association.

ALTERATIONS TO DERBY HOUSE, ST. JAMES'S SQUARE, LONDON, S.W. EDWARD GABRIEL (EDMESTON AND GABRIEL), ARCHITECT.

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THE ARCHITECTS' &
BUILDERS' JOURNAL.

WEDNESDAY,
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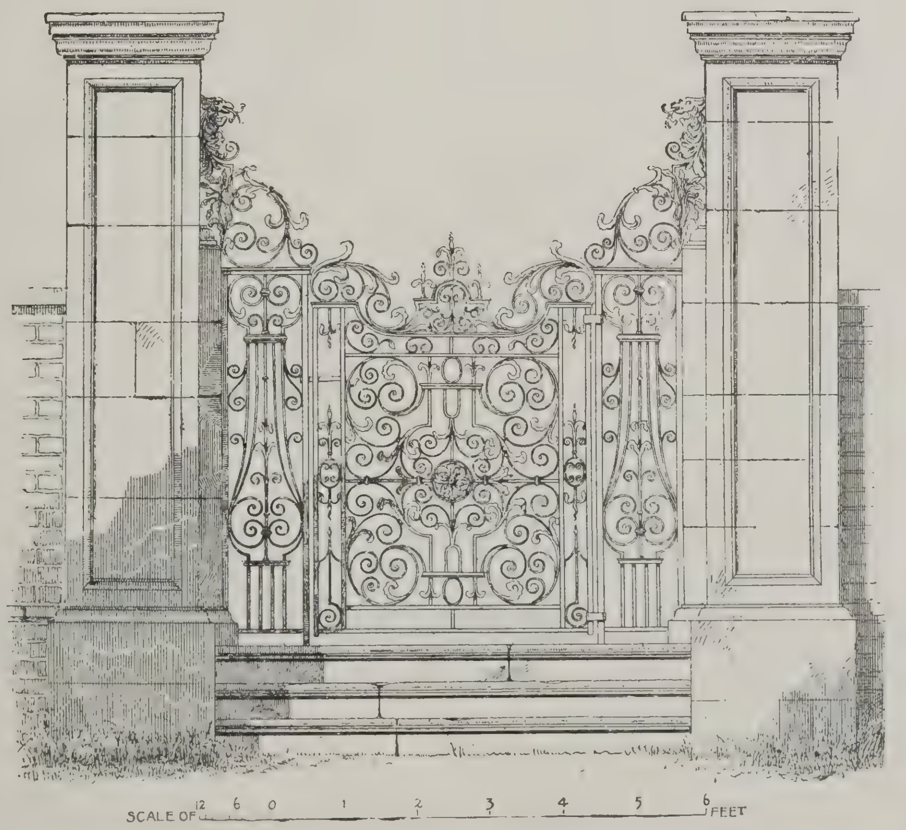
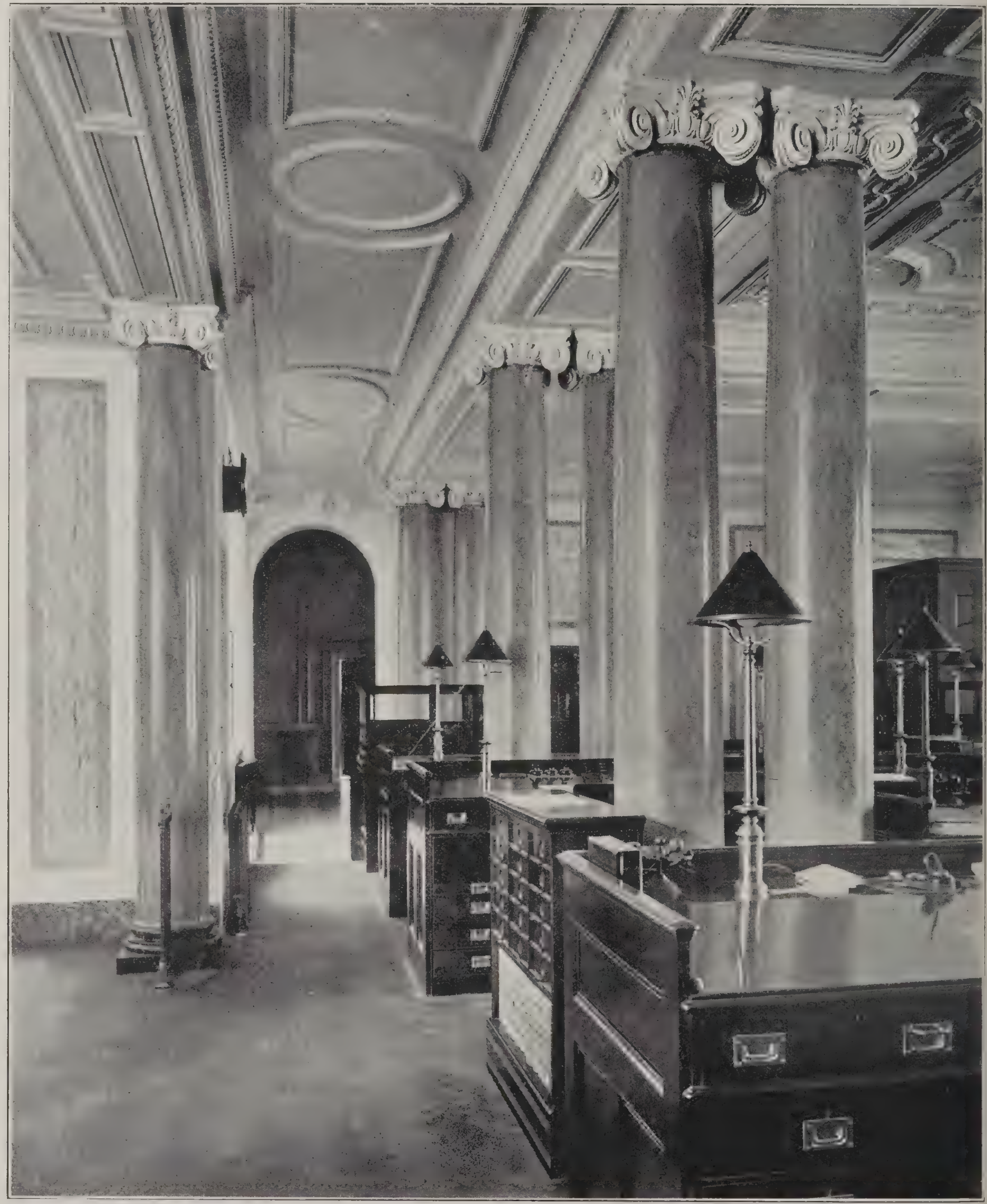


GARDEN GATE AT SCRAPTOFT HALL NEAR LEICESTER. BY EDNEY.

(From "English Ironwork," by J. Starkie Gardner.)



VIEW IN GENERAL OFFICE OF THE ENGLISH AND SCOTTISH LAW LIFE ASSURANCE ASSOCIATION. DERBY HOUSE. ST. JAMES'S SQUARE, LONDON, S.W. EDWARD GABRIEL (EDMESTON AND GABRIEL), ARCHITECT.

(For particulars see page 620.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 13th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 881.

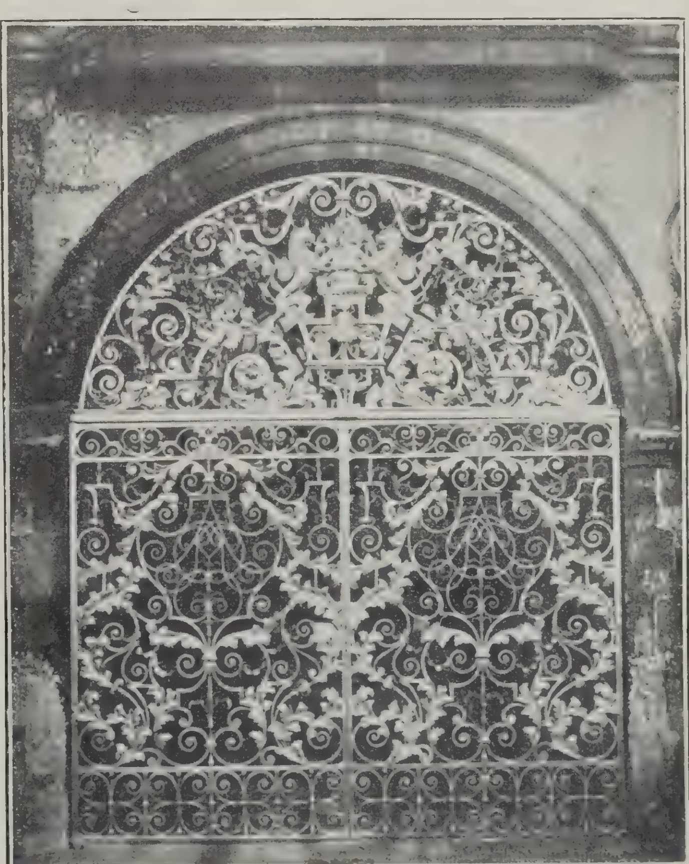
NOTE: The List of Contents will be found on page IV. of the front advertisements.

English Ironwork.

THE development of ironwork design in gates, grilles, and railings, which are the more important forms in which metal-work is carried out, no doubt arises from the fact that iron is a material which can be made strong enough to act as a secure fence, without obscuring the view. That is the t recommendation of iron as a substitute for stone walls closely boarded-up gates, and this advantage would exist n if it could only be used in straight bars, vertical l longitudinal. The additional incitement towards its is that it is a malleable metal, which can be forged or nmered into graceful shapes of detailed ornament, still ving the view through it little impeded; so that what was essarily erected as a fence becomes an added beauty to the nain. This decorative character, though it may be realised a great extent in cast iron, if suitably designed, attains a ater freedom and interest in wrought iron, partly owing the fact, noted by Mr. Starkie Gardner in his important ok on the subject,* but sometimes overlooked, that it is rk which has to be carried out in a hurry, however carefly the intended design may have been thought over in wing it previously. As Mr. Gardner says: "The salient racteristic is that his (the smith's) chief operations are ried; he may ponder and think over important works, but e undertaken he must strike while the iron is hot, the heat l glare in his eyes, amidst showers of sparks, while the ing blows are delivered by assistant hammermen. His r ults under such conditions cannot fail to be more or less pressionist, and hence perhaps they appeal so strongly to artistic sense." This is perfectly true, and is one reason the superior interest of wrought-iron work. Cast-iron y have an exceedingly good decorative effect (as we see in ent buildings in London), but it must be designed in quite lifferent spirit, in severe lines and without any attempt at itating the effect of delicately modelled ornament, cast nament being always coarse and unsatisfactory in effect, as empting what it cannot do properly.

Although so much good work in wrought iron has been ne by English smiths, it is to a foreigner, Tijou, that we e the impulse which led to the production of the best glish work; and none of Tijou's English successors, ugh they emulated him, seem to have equalled him. Tijou, spite of his French name, came over from the Netherlands the train of William and Mary, and was probably a ench Protestant refugee in that country. Previously to is epoch, in the earlier Renaissance period in England, the diæval fancy and invention in ironwork seems to have ite faded away; iron fences, where used, consisted of veral bars confined by one or two horizontal rails, and with rhaps a certain decorative effect obtained by the alternation plain and twisted railings, and by the shaping of the heads of the vertical bars, above the horizontal bar which formed the tie. Open-work gates were often of wood, either over-laid with sheet-iron for preservation, or furnished with iron filling-bars or iron spikes on the top-rail; Mr. Gardner gives an illustration of a gate of this kind, of late seventeenth century date, at Groombridge Place, Kent.

The advent of Tijou, who from the commencement of the reign of William III. had all the royal patronage, and seems to have had as much work as he could carry out, changed all this. He came to the front at once with a rich and sumptuous style of decorative work; in many of his designs a flowing acanthus leafage seems to develop out of the lines of a severer design which forms the structural foundation of the whole, though in fact this leafage is not (hardly could have been) forged out of the sustaining bars; it is artfully rivetted on to them; but the whole result has the appearance of unity and continuity of design. One is not the least surprised to find that there is ground for thinking that Wren, with whose buildings Tijou's work was frequently associated, had little admiration for this rich and ornate style of iron-work. The author remarks that "the indoor work at Hampton Court, presumably left in Wren's hands, . . . is as plain as Wren could have desired, and, though by Tijou, without a trace of the beaten leafwork of which he



ENTRANCE GATE, BURLEIGH HOUSE, STAMFORD, BY TIJOU.

(From "English Ironwork of the Seventeenth and Eighteenth Centuries.")

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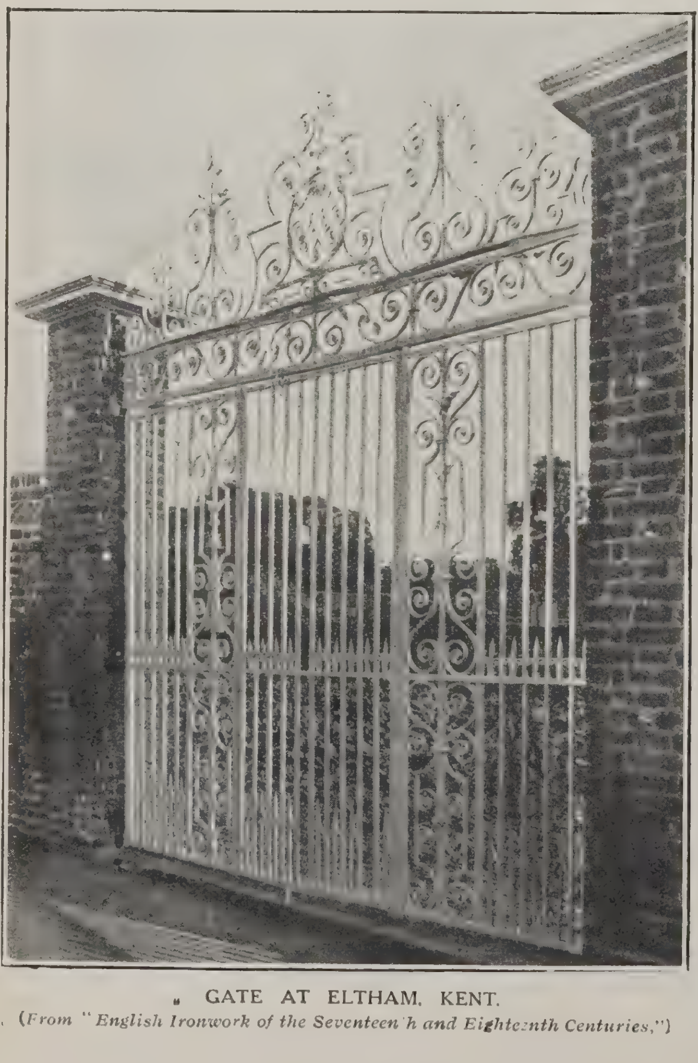
*English Ironwork of the Seventeenth and Eighteenth Centuries. By J. arkie Gardner. London: B. T. Batsford; 1911. £2 2s. 0d.

was lavish." The fact is, Wren was not an artist in drawing and in decorative detail; he was an artist only in the broad architectural sense of plan and general massing, and his greatest buildings are fine not because of but (in many cases) in spite of their detail; and he always showed a dislike to anything like exuberance of ornament; witness his contemptuous remark about the wishes of those who demanded a balustrade round the base of St. Paul's dome, and that "ladies could never like anything without a fringe." Tijou, however, appears to have had, or sometimes practised, a simpler and more monumental style of metal-work, as shown in the design which forms Fig. 15 in the book—"a pillar of ornament and gates designed by Tijou before 1690, for the screen of the fountain garden at Hampton Court." This was not carried out, and we are given no information as to the manner in which it was proposed to be executed; the illustration is, we suppose, reduced from an old plate, and a good deal of the work might, as far as its appearance goes in this illustration, have been cast-iron work; especially the pillars, which have none of the lightness of line and the freedom of curvature which we generally associate with wrought-iron work. Tijou's most characteristic manner is well illustrated by the rich and sumptuous gate to Burleigh House, Stamford, of which we give an illustration. Here we see plainly the assemblage of scroll bars which form the structure, and the effect of the florid leafage attached to them. The only defect of this design is that the decorative design, in the gates at all events, wants a rather stronger border than is furnished by the single bar which bounds it. Florid wrought-iron design of this type gains in effect by being associated with a little plain work in upright bars to contrast with and to form a kind of guard-border to it.

Gates and railings, or grilles (as the more elaborate styles of railing are usually called), being usually associated with architecture, or performing a kind of architectural functi should exhibit a certain degree of architectural character their design; both the piers and the grille should show architectural stability of design, seeing that they are in f structures in a lighter material which are taking the place a stone wall and stone piers. The way to do this is to g them sufficient simple structural lines to produce an appearance of stability, leaving the free play of ornament to the interstices. The worst thing possible to do is to introd into them any imitation of masonry details. This seems have been an unhappy practice at one time, at all events w the brothers Roberts, who were among Tijou's most emin successors; a design of theirs is illustrated by Mr. Gardn in which square gate-piers formed of an arrangement of th vertical bars are capped with an imitation in sheet-iron solid stone cornices with dentils; and there is a similar ample by William Edney, in the gates of Tewkesbury Abb The appearance is absurd, and the principle involved is s more absurd. Ironwork should be always treated as ir work. The right way, or a right way, to do it is sho in the gates to New College, Oxford, of which we give illustration; here we have the square piers built up of v tical bars with strong angle pieces, but the crown to the piers is a kind of finial of collected spirals, perfectly lig and appearing not like a weight on the pier below, but l a growth from it. In the design of the gates may be se the system of framing the centre pattern between plain pan of upright bars, giving an appearance of structural solid to the whole, which was what we felt to be wanting in Tijo gate at Burleigh House. A gate at Eltham, Kent (Pl lvii. in the book), stated to be a local production, and m simple in design, is an example of the same thing, the eff got by the contrast of plain vertical bars with decorat panels. In both these instances, as in many others, we that the "overthrow," as it is called, above the gates, rightly regarded as an opportunity for a very free ornamen treatment; but in both cases this flourish at the top rests a horizontal panel stretching from pier to pier; this a should always be done, because part of the function of t overthrow is to bind the piers together and form a head the gate; this being secured, the finish above it may be play with as we please.



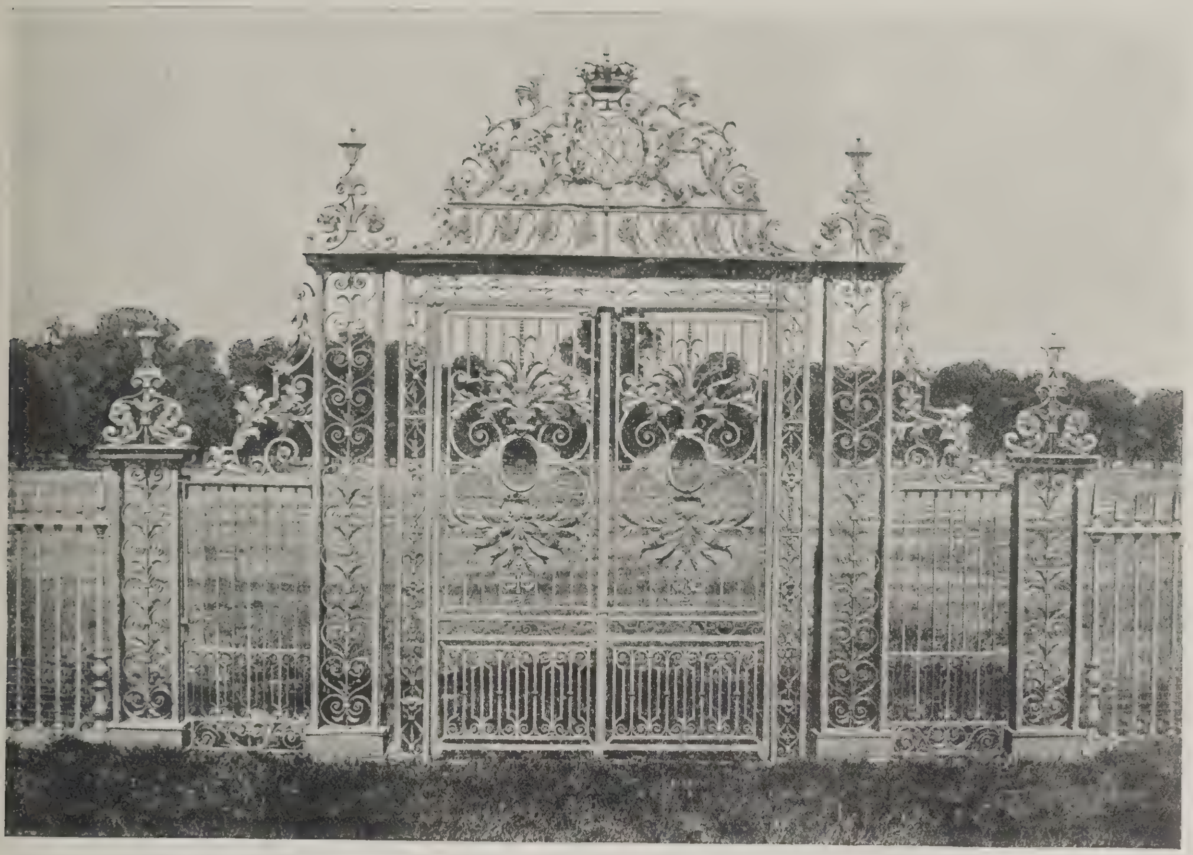
GATE AT ELTHAM, KENT.

(From "English Ironwork of the Seventeenth and Eighteenth Centuries.")

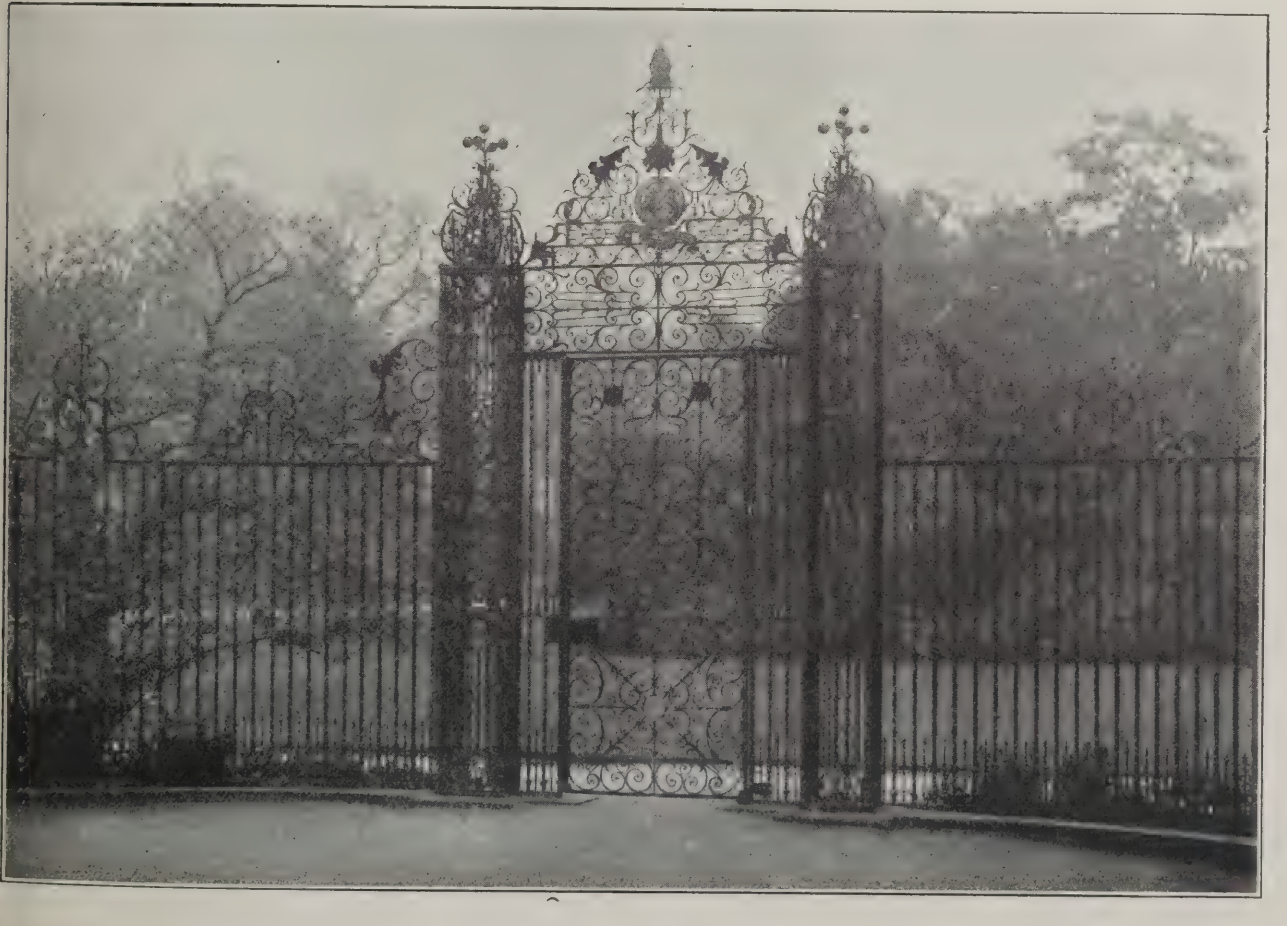
Among "The School of Smiths after Tijou," who fo the subject of a separate chapter, the first one named by M Gardner is Robert Bakewell, some of whose gates are ve good; he seems to have rather too great a taste curved overthrows in arched form. The brothers Rober already mentioned, come next, and are first heard of as t makers of the gates of Chirk Castle, one of the examp with solid-looking sheet-iron caps before referred to. Th seem to have done a great deal of work, but not in the b style. William Edney was a Bristol smith. All these w the immediate followers of Tijou, and may have work under him, but none of them equalled him in design.

Thomas Robinson of London (early eighteenth centu was a superior artist to any of the immediate successors Tijou; he made the New College gates, already referred and his screen to Beddington House, Croydon, is an cellent piece of work, showing a due mingling of sev structural lines with decorative panels, so that the whole h a satisfactory architectural appearance. Warren and Geor Buncker are two other prominent men, by the latter of wh there is a very good gate in Dulwich. In referring ag to Thomas Robinson's work, we may call attention to screen and gates to Carshalton Park (Plate xxxi. in the boo which is a very good and structural design, simple in its lin The fault of Robinson's designs in general is that they too pretentious; this one at Carshalton is an exception.

In a chapter referring to "the Landscape Gardeners" a "The Architects," Mr. Gardner describes how the false ta



GATE TO THE FOUNTAIN GARDEN, HAMPTON COURT. BY TIJOU.



GATE TO THE GARDENS, NEW COLLEGE, OXFORD.

for what was called natural garden scenery—the substitution of meandering walks and an affectation of natural scenery instead of formal gardening—under the hands of Kent and Brown, destroyed all real design in gardening, and obliterated the decorative screens and gates of the previous age. "The garden disappeared from sight and the park extended unbroken to the front door. The house had to stand in the midst of the most delightful natural scenery without intervening artificialities of any kind—terraces, steps, walls, hedges, even flower-beds and garden walks disappeared, and the grounds arranged by Kent and Repton are seen to have an unbroken sweep of sward right up to the house itself." It is, however, not quite fair to Repton to class him with men like Kent and Brown; though he took up the prevailing taste to a great extent, he was a far abler man than either of them, and some of his ideas on the treatment of ground round a house are still of value as suggestions; and he had very just ideas as to the style of architecture which would harmonise best with the special character of the site and the adjoining landscape. In regard to the architects, they, in the seventeenth and eighteenth centuries, did not attempt to specialise in garden design; "during Wren's career the designs for the iron-work were left wholly to the executants"; and Tijou unquestionably did better in this work than Wren could have taught him. Gibbs was the first architect to make and publish designs for iron-work in gates and railings; and they are, as Mr. Gardner says, monotonous. But when he goes on to imply that architects are to let these things alone now and leave the craftsman to design them, he is putting forth a view which we cannot accept and which architects in general will not accept; nor is there any reason why they should. An architect who is interested in the surroundings of a house, as he ought to be, would wish to have the decorative features in connection with the garden and terraces all in keeping with his central architectural idea, and he can hardly ensure this but by designing them himself; and there are plenty of architects now who are likely to do this better than the craftsman will do it if left to himself. Mr. Gardner's attitude is that of the craftsman who wants the architect to leave him alone. It is a natural position for him to take up, but there is another side to the question.

As a history and illustration of the subject the book is an excellent one, well written, well illustrated, and well got up, and ought to prove of permanent value.

The Ivy Question.

IT is stated that the Society of Antiquaries have passed the following resolution unanimously:—"That, in the opinion of the Society of Antiquaries, any proposal to restore the ruined church of Overstrand is undesirable, and would result in the disappearance of much of the evidence of antiquity which still remains. A preferable course would be to secure the ruins as far as possible from the ravages of ivy and weather, and not to attempt to graft new work on to them." Evidently the Society is distrustful of ivy, and probably this insinuation against it will call forth the indignant protests of those lovers of the picturesque who esteem ivy as one of their chief joys. In their eyes, ivy is sacred; and because it is consecrated by painter and poet, any allegation against its propriety, or any assertion of its destructiveness to buildings, is always hotly challenged by those who have a sentimental regard for it. Probably they form a very compact majority, to whose emotionalism it were vain to oppose reason. Nevertheless, we believe that the number of those who prefer to admire a building for its own integral beauty rather than to see its features obliterated by an overgrowth which they believe will in time sap its strength, is steadily increasing; and these purists very reasonably ask, "What is the use of building beautifully if the work is to be covered up by an overgrowth of some creeping plant? Why go to
trouble and expense of carefully erecting fine stonework w
almost any sort of rough walling is good enough to carr
creeper or climber?" In fact, we have known building
which this theory has received practical application. Betw
the rival schools of extremists for and against ivy, there
arisen a third or half-way house party, who like to see
but not too much of it. It should, they say, be kept t
and should not be allowed to go beyond a certain height
that, at all events, the lines of the building will not
obliterated, while beyond the prescribed limits of the gro
the material and texture of the walling will be sufficie
revealed. This middle school meets with the usual fate
mediators, and is heartily abused by both the others.
have always thought that the vexed question as to whethe
not ivy really destroys masonry or brickwork should be m
the subject of exhaustive enquiry. If it were indubita
found to injure them to the extent often alleged, sentimenta
could hardly survive the shock of the proof; and if, on
other hand, its innocence were established, the fact could
affect the objection of those who feel that it is in any ca
disfigurement.

An Arbitration Case.

IN the arbitration case, Porteous v. The Trustees of
Saltburn New Primitive Methodist Church
Schools, of which, at the time, we gave a brief rep
several points of interest arose. In the first place, it seem
be far more satisfactory to bring such cases before a compe
arbitrator of the standing of Mr. J. W. Simp
V.P.R.I.B.A., than to submit them to a court of law,
which the President, no matter how learned and capable,
not be expected to have the clear vision of the points at i
that is necessarily peculiar to the professional training
experience of an architect. In the present case, the
simplicity of those points rendered it very desirable th
professional expert, who alone, out of his intimate knowl
of such matters, could properly appreciate their real sig
cance, should be called upon to adjudicate upon them. Bro
speaking, the question was whether the Trustees of the ch
schools were justified in retaining the sum of £131
balance of contract, on the plea that the contract had not
completed within the stipulated time. The contractor, o
part, urged that there were several reasonable causes for
delay—among them being that the site being occupied
garden produce, there was delay in getting the tenants to
it, while a telephone pole was not removed in
to prevent obstruction to the work of laying
bricks; and that further delays were caused by v
tion orders with regard to materials, by a spell
exceptionally wet weather, by a strike of labourers, and
certain other conditions. Mr. W. H. Hope, solicitor
Sunderland, who appeared for the builder, contended th
the respondents had failed to give possession of the si
the stipulated time, they had forfeited any claim for liquid
damages in the terms of the contract; and that as the bu
had received no formal notice that satisfactory pro
was not being made, and no extension of time (as provid
one of the clauses of the contract) in consideration of
variations was offered him, he had no opportunity of exp
ing the work and avoiding the penalty. Citing the ca
Wells v. The Army and Navy Stores, Mr. Hope quoted
Justice Vaughan Williams as saying, "Where you ha
time and penalty clause, it is always implied in such cl
that the penalties are only to apply if the builder has, a
as the building owner is concerned, that time accorded to
for the execution of the works which the contract contemp
he should have." Mr. Hope contended, therefore, that
Trustees had no right to claim for liquidated damages i
clause as to liquidated damages by their own act or de

d ceased to apply." On the other side, it was contended
at the delays were due entirely to causes that were under
e control of the contractor, who, it was alleged, although
had never applied for an extension of time, was given three
eks extra. As already recorded, the arbitrator found that
e Trustees had no claim to the sum they sought to withhold,
d that they must pay also the costs of the arbitration. Upon
e merits of the case we can have nothing to say; but the
ints in dispute, the arguments arising from them, and the
cision of the Court, seem to be of sufficient importance to
rrant this brief summary of a case that occupied three days
the hearing, and that illustrates very clearly not only a type
dispute that is incidental to the building industry, but also
at is perhaps, on the whole, the most satisfactory method
arriving at a settlement of such disputes, where the parties
unable to come to terms without incurring the expense and
uble inseparable from any form of litigation. No doubt
h disputes could be, and often are, ended amicably and
xpensively by means of round-table conferences. In the
se under notice, it was mentioned that as many as 500 letters
d passed between the parties. According to our observation,
ensive correspondence seldom prevents litigation, sometimes
ually leads to it, and generally serves only to complicate
when it arises, and is therefore best avoided. Letters
ween the parties to a contract should be few, brief, business-
e, and unargumentative. Any question that demands dis-
sion should be the subject, not of letter-writing, but of
sonal conference. We understand that a full report of this
eresting case will appear in the Northern Counties Federa-
n Year Book for 1912.

The New Waterloo.

HE extensive alterations which are being made at Water-
loo Station will be advanced one step further towards
completion when, in the course of the next month, the
v entrance from Westminster Bridge Road will be thrown
n for traffic. The entrance will be through the iron gates
ich abut on the railway bridge that crosses the thorough-
e, and within which a work of much engineering skill has
n successfully completed without any interruption to the
way traffic. Here there originally existed a range of brick
hes, the height of which was quite insufficient to allow of
passage of vehicles. These arches have been removed,
in their place have been substituted iron girders and a
of columns, the walls being faced with white glazed
ks. The new approach road is of easy gradient, and
ls to the platform level at the front of the enlarged station
Waterloo Road. Two spur roads, from the thoroughfare
wn as the Lower Marsh, join this carriage way at the
mit of the incline. Considerable widening and improve-
ts are also to be carried out at the existing approach from
k Road, so that it will be possible in future to enter the
ion at the platform level from four points widely apart.
re is eventually to be an additional central road for the
usive use of vehicles awaiting the arrival of passengers.
improvement scheme also includes the demolition of the
ent Central and North stations, in order to make room
the continuation of the range of large and convenient plat-
ns, which will then extend from the new Approach Road
ower Marsh to the north boundary of the station in York
d, all to be accessible from the new Concourse.

veral years must elapse before the scheme is carried out
s entirety, but when it is completed Waterloo Station will
y the distinction of being the largest in the world, a
ion at present held by Waverley Station, Edinburgh,
h covers an area of 22 acres. After Waterloo, Euston
e next largest station in London, covering eighteen acres,
out two more than Liverpool Street. The new L.B. and
station at Victoria covers sixteen acres. Its nine platforms are probably the longest in the Metropolis, measuring 1,500 feet each, or a total of 2¼ miles. St. Pancras Station is not remarkable for its acreage, but it boasts the finest single span roof of any station in England, covering, as it does, 169,400 feet, and measuring 240 feet across. The eighteen platforms at Liverpool Street are spanned by two tremendous glass roofs, which contain 4,114 tons of iron, and if measured flat would cover 268,000 sq. feet. Paddington also possesses an extensive imposing roof.

Architects and the House of Lords.

WE fully expected that the provision of the Copyright Bill, to give architects a copyright in their designs, would meet with a good deal of opposition, if only on the ground that it was a novel provision, which for many people was a sufficient reason, and often the only reason they had to give, for objecting to it. But we thought that this stage had been safely passed. It was reserved, however, for a peer, Viscount St. Aldwyn, to make a final effort, in the House of Lords, the other day, to deprive architects of a piece of justice which the law has tardily dealt out to them, by proposing an amendment with the object of nullifying the enactment. His amendment ran thus:—

> "Where, in the case of an architectural design or drawing for the erection or restoration of any building, the design or drawing was ordered by some other person and the author was paid for superintending such erection or restoration, then, in the absence of any agreement to the contrary, the person by whom such design or drawing was ordered shall be the first owner of the copyright."

The effect of this would be, of course, that anyone who had paid an architect for designing and overseeing the erection of one house, should be at liberty to build any number of repetitions of the same house, without further reference to the architect. The reasons given are characteristic. With this nobleman "the public" are everything, the architects (who, after all, are part of the public) are nothing, and merit no consideration at all. They are, he informed the House, a by no means ill-paid profession, a statement which can hardly be substantiated; and if an employer who had paid the architect for his work desired to repeat that work, he could only do so at the cost of what Viscount St. Aldwyn had the insolence to call "paying blackmail to the profession." That such language should be seriously used in a debate is a curious instance of the kind of prejudice against architects which seems to be traditional with many Englishmen. According to persons of this stamp of mind, anyone may be protected except an architect. If a man commissions a group from a sculptor, and pays for it, is he therefore to be entitled to have any number of copies of the work made by other hands, and sell them? Most people would recognise that this was unreasonable; if they can recognise it in the case of a sculptor, why not in the case of an architect? Then we were told that if a local authority had obtained plans from an architect for artisans' dwellings, and then wished to extend the scheme by building additional blocks, if they could not do this without an additional payment to the architect, this was "an additional burden to be imposed by Parliament on the cost of these houses"—an unphilanthropic measure in fact. It does not seem to have occurred to him that architects may have some claim to philanthropic consideration. Also Lord Haldane, in commenting on the proposal in a rather half-hearted manner, concluded by admitting that the amendment "would destroy the root principle of the Bill," which was to bring in architecture as one of the fine arts for which copyright might be secured, and give architects, "at last," the recognition of a right in the creation of their own brains in the same way as it was given in the case of other artistic persons; a better conclusion to the speech than we should have expected from the earlier part of it. Lord Plymouth, who understands the subject, of course opposed the amendment, which was eventually, by leave, withdrawn; but its introduction, and the terms in which it was supported, form a curious and characteristic example of the hostility to architects which is a kind of British institution. No such feeling exists in France; the word "architect" in that country is a presumption that the bearer of it is a person worthy of respect; with many people in England it seems to include a presumption to the contrary, and an architect's rights in his work are to be described as "blackmail."

Australian Commonwealth and the Strand Site.

THE Commonwealth of Australia has practically decided to establish its headquarters in London on part of the "Strand site"—the island facing the Strand with St. Clement Dane's Church and Aldwych to the east and north-east, and Melbourne Place to the west. News came from Melbourne last week that the Federal House of Representatives had adopted the scheme of the Commonwealth Government for the purchase of this land. The Senate has yet to endorse the decision of the Lower House, but in Australian circles this assent is taken for granted.

For some time Australia has been searching for a site on which to erect a house worthy of that great country. At the present home of the Commonwealth in Victoria Street it has been stated by one of the chief officials to a representative of the "Standard" that certain recommendations as to sites had been made to his Government by the High Commissioner, Sir George Reid, some time before the Coronation. "When Mr. Batchelor, the Australian Minister for External Affairs," it was stated, "came to this country these sites were visited and carefully considered. This gentleman was favourably impressed with the Strand site, and his views were endorsed by several other leading Australians. Advantage was taken of the presence of some twenty members of the Federal House of Representatives in London at the time of the Coronation to inspect the sites and talk over the question on the spot, and the result of these discussions and of subsequent deliberations in Australia is the announcement cabled to this country last week.

"The High Commissioner's recommendation only contemplated the acquisition of a limited portion of the Strand site, but the scheme decided upon would seem to be a more ambitious one, the whole of the vacant land east of the Government of Victoria Building coming within its scope.

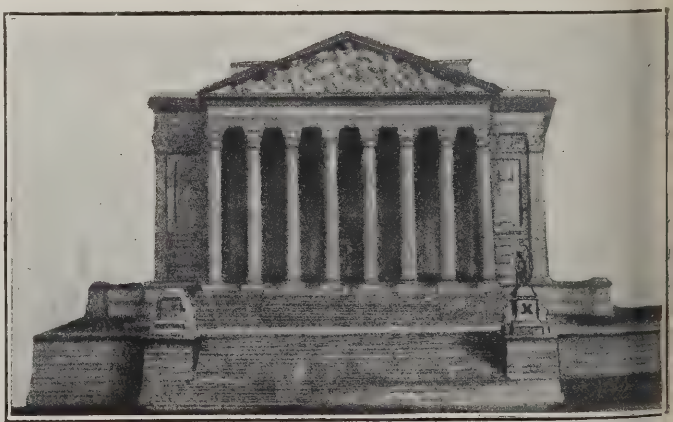
"It is understood that a building worthy of the Commonwealth and of the magnificent site in the Strand will be constructed—a building seven storeys high, costing a quarter of a million of money, and in general form harmonising with the Victoria building on the south-western corner of the site. The site will be freehold, and will cost £364,000. It is 22,885 square feet in extent, or with the Victoria plot 24,360 feet."

St. George's Hall, Liverpool.

WE regret to see that the Liverpool Finance Committee have decided by 67 votes to 26, and in defiance of a whole phalanx of architectural opinion, to remove the boundary wall at the south end of St. George's Hall and build a wide flight of steps from the street to the portico; which flight will finish at the bottom on a slope crossing its axis, and therefore will leave the undignified effect of a series of steps cut off at unequal lengths by the sloping line of the street pavement; the same mistake, on a great scale, which was made in London, on a small scale, in the case of St. Martin-in-the-Fields. There is to be a pedestal flanking these steps on each side, on one of which is to be placed the memorial statue to King Edward VII., leaving the othe vacant till a suitable subject is found to occupy it. This i perpetrating a double mistake. We never could understan why the question of the King Edward memorial was mixe up with that of St. George's Hall at all; but what the Cor poration have saddled themselves with now, in addition to th distorted flight of steps, is the absurdity of a memorial statu on one side of the steps, leaving the composition lop-side until the indefinite period when they may find a subject suite for a corresponding statue at the other side. This is not a easy matter, for one cannot properly group a royal memoria with a memorial to a subject, in symmetrical positions; no because kings are in themselves superior to other mortals, bu because their official position is superior. You cannot put statue of a king on one pedestal, for instance, and that of a eminent member of Parliament on the corresponding pedestal it would be felt that the ideas connected with the two figure were incompatible. If the memorial statue of Edward VII is erected on one pedestal, the only fitting complement to on the other pedestal would be the memorial statue of th present king; and we may hope it will be a long time befor there is any call for that.

The architectural point, as affecting the building, is separate thing. We may repeat what we have already sai that the existing wall at the south end of the building, wit its strongly marked level line at the top, is what cuts off th building from the ill-effect of standing on the slope of a hil by giving it a level base line and reducing the slope of th ground to a secondary accident of site. The people wh cannot see the importance of this do not understand anythin about the relation of a building, architecturally, to its su roundings. A great flight of steps up to the portico of classic building is all quite right when it is at the end of a ma road of approach with the ground line level in the directio at right angles to the axis of the building. It is quite different thing when the steps ascend only from a secondar street which crosses their axis at a slope. Mr. Matear, Liverpool, has published in the "Liverpool Daily Post" compromise suggestion which is clever, at all events, showin a lowering of the existing wall, and an open rail at the to so that the greater part of the flight of steps can be seen, b the sloping street line is still cut off from connection with th building. But it would be still better left as it is.

We doubt whether the scheme will be persisted in, in spi of the vote of the Finance Committee; they will find too gre a body of intelligent opinion against them. The vote, in o opinion, simply represents the obstinacy of people who obje to any one knowing better than they do; it is the spirit which mistakes of this kind are often persisted in: "We do care for your reasons; we are going to do as we please." T comments of the section of the local Press which suppo



ST. GEORGE'S HALL, LIVERPOOL: SHOWING THE NEW SCHEME APPROVED BY THE FINANCE COMMITTEE, WITH FLIGHT OF STEPS SUBSTITUTED FOR THE PODIUM.

the action of the Corporation are rather amusing; they do not understand the reasons for objecting to it in the least; they only talk "journalese" about "our noble buildings," and so on.

The Ruined Churches of Norfolk and Suffolk.

A CORRESPONDENCE in the "Times" relative to the half-ruined church of Overstrand, three miles from Cromer, raises incidentally a question of some interest in regard to the treatment of ruined churches. It appears that the old church at Overstrand had got into a ruined state in the middle of the eighteenth century, though it was not till 1866 that accommodation for worshippers was provided, not by repairing the old church, but by building a new one, described as being a very ugly one. Further accommodation is now required, and it has been proposed to provide for this by repairing and re-opening the ancient church. To most people this would seem a sensible and reasonable proposal, but it has evoked a vote of censure from the Society of Antiquaries, who "unanimously" passed a resolution to the effect that "it would be most undesirable to restore the ruined church of Overstrand," and that the proceeding "would result in the disappearance of much of the evidence of antiquity which still remains." Really, one may ask, what were churches built for originally? Was it in order that they may be "evidences of antiquity," or that they might be used for the purpose of religious worship? We remember the case of the cathedral of Dunblane, the re-roofing of which and its re-opening for public worship was violently opposed by the Society for the Protection of Ancient Buildings; as if that were not putting the remains to a better use than leaving them to decay by degrees. And now the Society of Antiquaries has stultified itself in the same manner in regard to the smaller question of Overstrand church. Mr. S. J. G. Hoare, who is a trustee of the living of Overstrand and a resident in the neighbourhood, writes an amusing and sarcastic letter in the "Times," at the expense of the Society of Antiquaries, the concluding paragraph of which is worth quoting:—

> "I may be a Philistine, but I cannot help thinking that a church was not meant to be a ruin, that the eighteenth century was not the best time to make it one, and that it is a scandal to have in one's midst a gaping monument of former indifference. Let the Society of Antiquaries, however, take comfort. When Overstrand Church is restored there will still be 125 ruined parish churches in the county of Norfolk 'with much of the evidence of antiquity,' and, may I add, of modernity as well? For they show the devotion of former generations and the indifference of those that have succeeded them."

Everyone who has gone about much in Norfolk and Suffolk must remember how common is the spectacle, in those counties, of the ruins of a church, built in a district once (in the days of the wool trade with Flanders) a populous one, now comparatively sparsely occupied, and the churches consequently left deserted. But the time might come, in the changes brought about by some new establishment of a watering place, when a church would again be needed where there are now only roofless walls. Would it not be a reasonable and commonsense proceeding to restore and re-use the ancient church, instead of leaving it as an "evidence of antiquity"? Four miles to the north of Southwold, for instance, at Covehithe, are the roofless walls of a once grand parish church on the largest parish church scale; and in the centre of the grass-grown nave there is, or was some years ago, a small brick building which was the church actually in use. We confess that we should prefer to see Covehithe church re-roofed and open again for use, rather than the melancholy spectacle it now presents, or did when we saw it. But we suppose such a proposal would be enough to send the members of the Society of Antiquaries into fits. It is a pity that a society which includes so many learned and eminent men, and has done so much for archæology, should not be a little more broad-minded, and recognise that the present has its rights as well as the past. The attitude which they adopt in such cases as the one we have been referring to is not calculated to increase their reputation and their influence with the world at large.

The Society for Promoting Roman Studies.

AT a meeting of this Society on Tuesday week, at the Society of Antiquaries' room, Mr. R. H. Forster gave a lecture, accompanied by lantern illustrations, on the result of the excavations carried out last year at Corbridge, the well-known site of the ancient Roman station of Corstopitum. With the exception of one very remarkable and interesting inscribed stone (the interest of which, however, refers to general history rather than to archæology in its usual sense), the illustrations and the lecture rather left us with the impression that the archæological interest of the site has been nearly exhausted in the discoveries already made and published; at all events, the lecture did not seem to be a very important contribution to the scheme of a Society which put forth in its opening meeting such a very extended programme of study of everything connected with Roman remains and Roman history.

Proposed Paintings for Chelsea Town Hall.

A PROPOSAL, excellent in its intention, has been made, to decorate the large public room at the Chelsea Town Hall with four wall-paintings representative of men and women celebrated in Chelsea history; the competition for these to be confined to artists resident in Chelsea. The four panels were to represent, respectively, great artists, famous writers, leaders in religion, science, and music; and kings, queens, soldiers, and statesmen. What we take to be a selection from the designs sent in has been on view at the Chelsea Town Hall; but as no description of the subject or intention is appended to any but one or two designs in which the artist has incorporated an inscription as part of the design, it is not very easy to understand in some of them what the artist has intended to represent. But the impression left by the show generally is, that if any of these are carried out as suggested, the effect will be likely to be rather comic. It is almost impossible to group together in one picture men and women of different generations, in the several costumes of their time, with anything like a good effect; and when, as in one or two of the designs, nude symbolical figures are introduced and grouped with figures of men in coats and tall hats, the impression produced is absolutely ludicrous. Among those which are the best in respect of decorative effect and composition are No. 21, where a draped symbolical female figure is enthroned in the centre and eminent personages grouped on each side; No. 23, somewhat similar in general idea; No. 34, with a winged figure in the centre; and, in the decorative sense, No. 43, but the nude figures representing sculpture and painting group most oddly with the realistic costumed figures in the same picture. In our opinion the programme is radically wrong; instead of illustrating different classes of eminent men irrespective of chronology and costume, the subjects should be divided into four different epochs in the history of Chelsea, and all the figures of each epoch grouped together. There would then be the opportunity of painting four groups each representing one period and one style of dress, so that a unity of effect would be produced in each picture, instead of these absurd and impossible combinations of people in costumes which could never have been seen together. It would be well if this point were duly considered before it is too late. And if purely symbolical figures are introduced, they should be so treated and placed as to seem entirely apart from the portrait figures, and only put in as decorative adjuncts. In No. 21 this is sufficiently attended to; in some others it is not. We can hardly think that any of the designs sketched would be really satisfactory for permanent execution.

ANCIENT MONUMENTS PROTECTION ACTS.

The following is the text of the new Bill to extend the Ancient Monuments Protection Acts, 1882 to 1900:—

1.—There shall be constituted in accordance with regulations made by the Commissioners of Works, a board to be called the Ancient Monuments Board.

2.—The board shall consist of not more than twelve and not less than five persons to be appointed by the Commissioners of Works.

3.—The members of the board shall include—(a) The inspector of monuments appointed in accordance with the provisions of the Ancient Monuments Protection Act, 1882; (b) a member nominated by the trustees of the British Museum; (c) a member nominated by the Society of Antiquaries, London; (d) a member nominated by the Institute of British Architects; (e) a member nominated by the Ecclesiastical Commissioners; (f) a member nominated by the National Trust for Place of Historic Interest; (g) a member of the county council or corporation in whose jurisdiction the monument under consideration is situated.

4.—It shall be the duty of the board to advise the Commissioners of Works with reference to any question arising under this Act in respect of any monument.

5.—Every owner of a monument when he proposes to sell, destroy, alter structurally, or add to or part with possession of a monument shall give to the Commissioners of Works at least two months previous notice in writing of his intention in that behalf.

6.—Every owner of a monument when he proposes to destroy, alter structurally, or add to or part with possession of a monument shall first obtain the consent in writing of the Commissioners of Works, which consent shall not unreasonably be withheld.

7.—Where an owner of a monument shall so neglect to repair or support it as to render it liable to fall into decay and become ruinous, the Commissioners of Works may assume the guardianship thereof and exercise the guardianship as provided by the Ancient Monuments Protection Act, 1900.

8.—Where an owner of a monument—(a) signifies his intention to sell or demolish the same; (b) signifies his intention to alter the same structurally so as to prejudicially affect the value thereof as a monument; (c) so neglects to repair a monument as to render it liable to fall into decay and become ruinous; or (d) parts with the possession of the same; the Commissioners of Works shall have power to acquire the ownership thereof.

9.—(a) Where the Commissioners of Works propose to acquire a monument compulsorily, the price shall be settled by arbitration under the provisions of the Lands Clauses Acts, unless agreement is arrived at. (b) The Lands Clauses Acts (except section one hundred and twenty-seven of the Lands Clauses Consolidation Act, 1845) so far as they are applicable for the purpose and are not inconsistent with the provisions of this Act are hereby incorporated with and form part of this Act.

10.—In this Act the expression "monument" means any structure, erection, or monument of historic or architectural interest, or any remains thereof, which may be from time to time scheduled by the Commissioners of Works on the recommendation of the advisory board as being worthy of preservation.

11.—This Act does not apply to Ireland.

12.—This Act may be cited as the Ancient Monuments Protection Act, 1911, and may be cited with the Ancient Monuments Protection Acts, 1882 to 1900.

CORRESPONDENCE.

The Editors disclaim all responsibility for the statements made or opinions expressed by correspondents.

Correspondents are asked to be brief, and to write on one side only of the paper

Certified Plans of Houses dating from before the year 1800.

To the Editor of the "ARCHITECTS' AND BUILDERS' JOURNAL."

SIR,—The historical value of plans of old buildings which have been pulled down has often been demonstrated, and it is of the utmost importance that these records should be available for reference. Since in most cases of demolition, surveys are made in the ordinary course of events, and copies of certified plans are lodged with the district surveyor, it is evident that a large number of these records are already in existence. May we therefore, through your columns, ask all architects who have such drawings in their possession, or who may have occasion to make them, to kindly communicate with us, and if possible allow us the opportunity of having tracings made for the London collection? At the cost of a very little trouble a most important amount of information could thus be obtained.

PHILIP NORMAN (Chairman),
PERCY W. LOVELL (Secretary),
The Committee for the Survey of the Memorials of Greater London.
23, Old Queen Street, S.W.

Qualifying for Reinforced Concrete Construction.

To the Editor of the "ARCHITECTS' AND BUILDERS' JOURNAL."

SIR,—We were more than ordinarily interested in your monthly article in the "Concrete and Steel Section" which appeared on the 6th inst.

You dwelt upon a matter with respect to which we have been endeavouring to impress upon young men in the architectural and allied professions that we have a remedy whereby those on the lower rungs of the ladder may start on a progressive career.

When dwelling upon the neglect of reinforced concrete you ask: "What, then, is the assistant to do? Shall he, wasting in despair, die because the jobs are rare? Shall he emigrate or change his calling?" To all these questions we beg leave to provide the necessary answers.

The specific object of the International Correspondence Schools is to train those in the profession for their work while at their work, and it is the business of the International Correspondence Schools continually to revise the text-books wherever necessary, and include all the up-to-date practical instruction that is essential for its students to be completely *au fait* with everything that is of a practical nature.

There are no class methods of hindrance with the International Correspondence School system. Each I.C.S. student is a class by himself, individual tuition being one of the points of success of the International Correspondence Schools.

Now, anyone wishing to specialise in reinforced concrete construction would be well advised to take up our Concrete E gineering course, which deals with the su ject in a practical manner. The comp cated and often-times involved formu with which it has been the custom to hera reinforced concrete have been eliminate and the calculations necessary stated a simple and practical way. This latt fact should do much to remove the aw some impression which many archite and assistants have previously obtained the subject.

We might also add that we have equally satisfactory course on structu steel-work.

We are ready to refer any of yo readers who may want outside confirmati of the value of our instruction to I.C. students who have gone through a cour of instruction in the particular branch which the reader may be seeking inform tion himself.

We enclose for your perusal a copy our prospectus dealing with the subje mentioned, and therein you will see sy opses of the various sub-courses.

The I.C.S. system of instruction mea no hardships for the young aspirant, an in the words of Mr. Cecil Harmswort M.P., speaking at the Queen's Hall Monday of last week, "the I.C.S. bri education right to the domestic hearth."

It may not be out of place to repeat communication sent by Lord Curzon Kedleston, who would have presided at t above meeting had he not been under engagement to speak in the House Lords: "What appeals to me in the Inte national Correspondence Schools is t fact that they accomplish something, rather, many things. They begin by crea ing a desire to learn; they then go on supply the knowledge and the trainin and most practical of all, they finally fi the student suitable employment. Educ tion without a scientific basis and witho organization is of little use for the ha business life of the twentieth century. Y give a practical education. Your studen ought to multiply and flourish."

With that we beg to close this commu cation, and earnestly hope that you w see your way to publishing same for t benefit of your readers.

F. J. HORTOP, Publicity Manager,
International Correspondence Schoo,
Ltd.

ROYAL ACADEMY ARCHITECTURA AWARDS.

The following are the architectu awards at the Royal Academy schools th year:—

Design in Architecture, "The Hall a City Company."—Gold medal a travelling studentship (£200), Alan Bi ning. Set of Architectural Drawings.— First prize, silver medal, W. L. Clar second prize, bronze medal, A. G. Brye An Architectural Design.—Prize (£20) a silver medal, J. M. Whitelaw. Set Drawings of an Architectural Design.— First prize (£15) and silver medal, V. Rees; second prize (£10) and bron medal, Cyril Farey. Perspective Dra ing in Outline (open to architects onl "The 'College' at Westminster Schoo —Silver medal, J. G. Cooper. Origin Composition in Ornament (open to arc tects only).—Prize (£5) and silver med T. P. Bennett. Architectural Design wi Coloured Decoration, "The East End o Memorial Chapel."—Silver medal.— competition.

COMPETITION NOTES.

Woodseats U.M. Church, Sheffield.

he limited competition recently held the above church has been settled in ur of Messrs. George Baines and Son, itects, of London, W.C.

Cleveland Asylum Staff Cottages.

he awards in this competition, in which gns for six cottages to accommodate staff of the Cleveland Asylum were in-l, are announced as follows: 1 and 3, James Forbes, Middlesbrough; 2, srs. J. M. Bottomley and G. T. Well-, Middlesbrough. The assessor was T. Edwin Cooper, F.R.I.B.A.

Marylebone Municipal Buildings.

his competition was dealt with at iderable length in last week's issue. following list of awards includes one wo names that were then omitted: 1, T. Edwin Cooper, F.R.I.B.A.; 2, srs. Thomas Wallis and J. K. Bowden; lessrs. North and Robin; 4, Messrs. imus Warwick and Herbert Hall; mended by the assessor—Mr. William tehead; Messrs. Edwin T. Hall and E. ley Hall; Messrs. Clyde Young and S. East; Mr. Matthew J. Dawson; srs. H. Townshend Morgan and Alan e; Sir A. Brumwell Thomas.

Manchester Art Gallery.

will be remembered that in our issue ctober 25th, at p. 434, we gave a list ne senders of the ten sets of designs which the winning set had been ted. At the same time it was recorded the Manchester City Council having led not to proceed with the project, hever design was selected had but a ler chance of materialising. The es were as follows: H. P. Adams and I. Holden, London; R. Atkinson, Lon-, Bradshaw and Gass and A. J. Hope, on; Cooper and Slater, Blackburn; ich, Butler, and Savage, Birmingham; . Farrar, Leeds; A. G. Henderson J. R. Hacking, Glasgow; F. W. on, Liverpool; Warwick and Hall, lon; and T. Worthington and Sons, chester. The design selected by the sor, Professor Reginald Blomfield, A., and accepted by the City Council, nat of Messrs. Crouch, Butler, and ge.

a meeting of the Manchester City ncil, on December 6th, Mr. C. Behrens ex-Lord Mayor) brought forward a on approving of the recommendation e assessor engaged by the Infirmary Committee to decide upon the rela-merits of the designs submitted for an Gallery and Free Library. He ex-ed that the resolution did not bind the ncil to erect an art gallery and library. resolution was necessary to fulfil Council's obligations to those who sent mpetitive plans. One of the condi- of the competition was that "in the of the Corporation not giving any uctions to proceed with the work n twelve months of the assessor's d the selected architect will be paid dditional sum of four hundred eas, which sum, with the initial pay- of 100 guineas, will merge in the nission of 5 per cent. if and when the ings are carried out; and, in the of the Corporation abandoning the altogether, the selected architect will aid a further sum of 500 guineas, ng, with the previous payments, a premium on the entire competition 00 guineas." Mr. Behrens's motion hat "for the purpose of this clause in onditions of the competition and for no other purpose" the Council approve of the assessor's selection of the design numbered 4. Mr. Abbott said it was conceivable that another plan might, from the practical as distinguished from the architectural point of view, be more suitable. Was there anything in this resolution to prevent the Corporation eventually adopting another plan than No. 4? Mr. Alderman Box: Will the plans belong to the Corporation after the 1,000 guineas has been paid? Mr. Behrens said that if the 1,000 guineas was paid the accepted plans would belong to the Corporation. They had reserved the right to make any alterations in the plans that the city architect and the assessor might approve, but the Council could not afterwards accept another set of plans. The resolution was carried.

DEATHS OF MM. TONY ROBERT-FLEURY AND ALPHONSE LEGROS.

The Late M. Tony Robert-Fleury.

The death is announced of a gifted and eminent French painter, M. Tony Robert-Fleury, who was Honorary President of the Société des Artistes Français (the Old Salon). M. Robert-Fleury, who died at the age of 74, was an artist, as one may say, by inheritance, his father having been also, in the middle of the last century, one of the most eminent French painters of his day. M. Tony Robert-Fleury was remarkable not only for his technical power as a draughtsman and colourist, but for the thought and intellectual interest embodied in his works. Whatever subject he illustrated one felt that he had given his best thought to the expression of the subject chosen. One of his most remarkable and pathetic works, exhibited some years ago at the Salon, was the picture of Marie Antoinette awaking in her prison on the morning of her execution, in which the haggard figure of the unhappy queen was contrasted with that of the sentinel who had watched there all night, stretching his arms and yawning with callous indifference. This year's Salon contained a picture by him on what might be thought a hackneyed subject, a nude model resting in the studio, which was rendered quite interesting from the character and expression put into the head of the figure. Whatever subject he chose, Robert-Fleury was never commonplace; there was always individual character in his pictures.

The Late Mr. Alphonse Legros.

Simultaneously with the death of Robert-Fleury we have to record that of another painter, French by nationality, but who had become English by residence and repute, M. Alphonse Legros, formerly Professor of Fine Arts at University College, who died on Friday last, at exactly the same age as Robert-Fleury. His work as an artist had not been very extensive, but everything that he did was marked by a powerful originality. His picture of women at prayer is his most important work in painting, and is characteristic of his stern and severe style in design. He produced more work in etching than in any other branch of art, and excelled especially in the treatment of subjects expressing the pathos and tragedy of human life.

Balliol College Chapel Not to be Rebuilt.

It is understood that the Master and Fellows of Balliol College have decided against the proposal to rebuild the College Chapel.

MANCHESTER SOCIETY OF ARCHITECTS.

Mr. Paul Ogden on "Science and Proportion."

At the Sessional Papers Meeting of the Society on December 6th, Mr. Paul Ogden, F.R.I.B.A., read a paper entitled "Science and Proportion." Mr. Ogden's paper has been awaited with great interest by those who know how thoroughly he has investigated the subject he dealt with, and at the conclusion of the paper there was keen discussion of the points set forth.

The following quotation from the Greek teacher Epictetus, said Mr. Ogden, though not exactly a text, was of value to his present purpose as evidence of the Greek attitude of mind, and with other quotations that would follow, shows how modern discussions of Art and Architecture might be regenerated.

". . . Seeming doth not for every man answer to Being; for neither in weights nor measures doth the bare appearance content us, but for each case we have discovered some rule. And here, then, is there no rule above seeming? And how could it be that there were no evidence or discovery of things the most necessary for men? There is, then, a rule. And wherefore do we not seek it and find it, and having found it, henceforth use it without transgression, and not so much as stretch forth a finger without it? For this it is, I think, that when it is discovered cureth of their madness those that mismeasure all things by seeming alone; so that henceforth, setting out from things known and investigated, we may use an organised body of natural conceptions in all our several dealings."

Few architects there are who do not use the word Proportion. Some few have given us diagrams setting out buildings on interaxial lines, but none have given reasons that the employment of such lines is the essence of the matter. Interaxial lines spaced a unit apart on plan, forming equal squares, have been used for the plan; and further than this, horizontal lines for the elevations and the spacing corresponding to the ratios of the musical scale. These will be found to give a harmonious, and therefore satisfactory result. The skeleton of interaxial lines would be something like a well-tuned musical instrument on which you may play harmonious compositions should your knowledge of consonance, which to the architect means proportion, be equal to the task. Scientists assert that the ear and the eye, which are only media to the intelligence, are both affected by the same law, i.e., by vibrations. If rhythm and proportion are common to all objects worthy of the name of excellent, and if we could infuse rhythm and proportion into such objects, we should have objects which to the Greek view would be what we term "the beautiful." An ancient Greek would not understand our use of the word "beautiful." "That which is excellent," "That which is for the chief good," are the Greek views. Greek Art is based on scientific reasoning. Proof may be found in Plato's "Republic," Aristotle's "Ethics," and many other works (from which Mr. Ogden quoted passages at length).

After quoting passage from Combarieu's work "Music, its Laws and Evolution," to establish his point that music is based on science and law, and after pointing out that the same laws of proportional numbers are at the basis of chemistry and of the spectrum, the lecturer said that we must find one common rule applicable not only to architecture, but to music, dancing, painting, poetry, and all objects. The one rule is harmony, which springs from rhythm, which in turn springs from measurable and synchronous vibrations. Buildings raised upon a skeleton of lines of proportional spacing, sub-divided in measurable proportions down to the smallest ornament, might be the solution that would bring us unity and harmony. Objectors ask "Should all the buildings in one street be on one unit?" The reply was "It is desirable that they should have proportional units." He had that night brought before them by means of extracts from unusual sources theories and principles, the result of reading outside the beaten track. Further investigation is necessary before the true principles could be gathered together.

He had not yet put up a building without using the method of interaxial lines, and the work is set out by rods cut to the length of the unit. For cottages he used a unit of 3 ft. 3 in., houses 4 to 5 ft., schools 5 ft. 3 in., works 10 ft., 15 ft., and 20 ft., furniture and ornament some measurable unit of the main unit.

Diagrams would not be given that night. They would be useless unless that which was adduced had been enough to justify continuing the work. We have lost the nature of Greek practice. Can we regain it? The law of numbers rules the world; the properties inherent in vibration, measurable, synchronous, harmonious, rhythmetic and in consonance, are the essence of the chief good in life.

Prof. Capper, in moving a vote of thanks to Mr. Ogden, said that they were grateful for the patient research that the paper was evidence of, and admired the way the lecturer had brought his wide reading to bear upon architecture. He suggested that French Gothic partakes largely of classical unity and proportion, in contrast to the northern Gothic.

Mr. Sellars, in seconding, suggested that beauty depended on fitness as well as proportion, and the two were not always compatible. To a sailor a ship perfect in all her points was beautiful because she was fittest for her work. In building, beauty was again fitness. When we have fitness we could reduce it to rule; but with new habits and methods of construction growing up, what becomes of our rules? Rules may be good for the weak, but the strong will drive his coach and six through them.

Mr. Corbett thought that a general rule would be either too wide to be definite, or too narrow to be universally applicable. Greek conditions were different from modern conditions, but even their exactness was more to please their mathematicians than their artists. We must trust our trained sense.

Mr. Oldham felt that art was joy in life, but Mr. Ogden's conclusions were in contradiction to this.

Other speakers were Messrs. Hindle, Harris, Worthington, Wood and Halliday, and after the discussion the vote of thanks was heartily accorded to Mr. Ogden.

NEW INSURANCE PREMISES.

(See Centre Plate.)

We illustrate in this issue the alterations which have been made at Derby House, St. James's Square.

The mansion at the south-east corner of St. James's Square and Charles Street was one of the earliest erected houses in the history of St. James's Square. It has been known for the past 40 years as Derby House, having been during that period the town residence of the Earls of Derby. A short time ago, on the removal of Lord Derby to Stratford Place, the freehold was acquired by the English and Scottish Law Life Assurance Association, and in remodelling the premises to suit the requirements of the Association it became necessary to practically clear the whole of the ground floor and basement, and to provide an additional entrance and new a staircase at the eastern extremity o premises in order to give separate a to the upper floors of the building, portion of the building has been alr and added to for the purpose of ac modating the Caledonian Club.

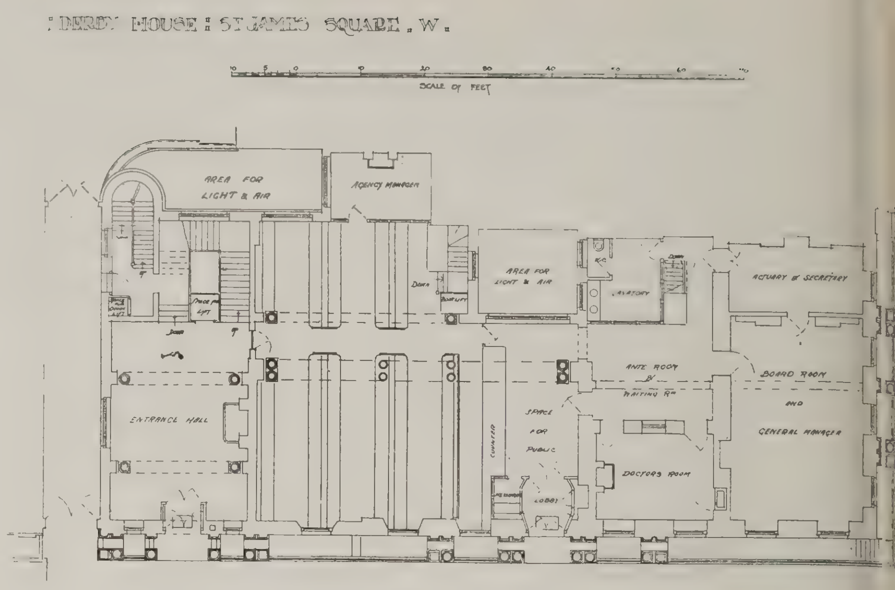
The alterations and additions have carried out from the designs and the superintendence of Mr. Ed Gabriel (Edmeston and Gabriel), wh endeavoured to make the new work monise with the old as far as possibl

The general office of the Associ occupies the central portion of the gr floor. From the ante-room on the side the private offices are entered, sisting of board-room and general ager's room, actuary and secretary's r and doctor's room. In the basemen situated the strong rooms, stati stores, lavatories, and house-ke apartments.

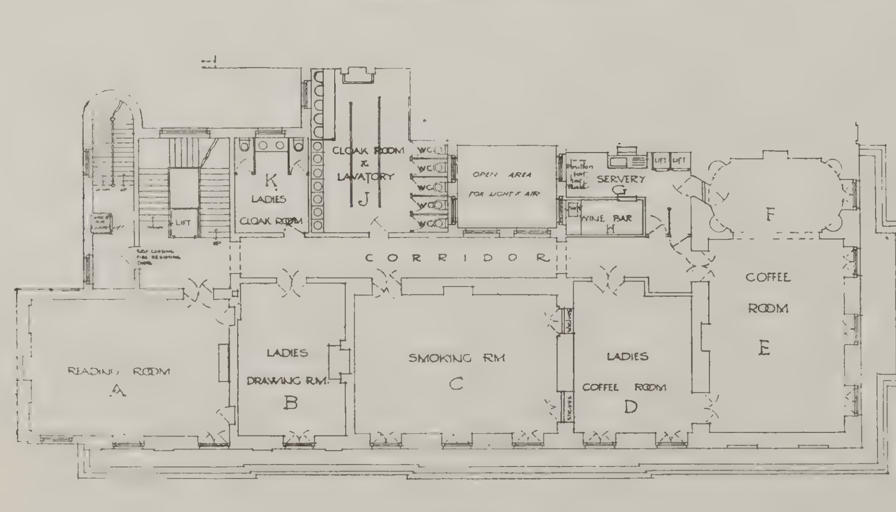
The club premises consist of a base and sub-basement; on the ground fl entrance hall, main staircase and se stair; on the first floor—reading-r ladies' drawing-room, smoking-r ladies' coffee-room, coffee-room, ser cloak-rooms and lavatories: on the s floor—card-room, billiard-room, pr dining-room, office, servery, bedroom dressing-rooms; on the third floor— rooms, servery, bath-rooms and rooms; and on the fourth floor—kit scullery, larder, plate-room, still- housekeeper's rooms and dormitories

The general contractor for the buil and for office furniture and fittings Mr. Jas. Carmichael, of Wandsworth the following were the sub-contractor ployed: Constructional steel-work, land and Sons; electric lifts, Wa and Co.; marble work, parquet flo and tiling, Art Pavements and De tions, Ltd.; ornamental plasterwor and A. Brown, Ltd.; ornamental work and grates, Thos. Elsley, Ltd.; casements, the Crittall Manufact Co.: strong-room fittings (incl armour-plate strong-room doors, gates and grip frames, as well as large steel cupboards and adjustable shelving), Chubb and Son's Lock and Co., Ltd.; sanitary fittings, Tylar Co.; carving, Gilbert Seale and hot-water and heating, J. Jeffreys Co.: electric lighting and bells, W Mossop and Co.; electric-light fit Strode and Co.; furniture, Frank C son and Co.; blinds, J. Avery and

Mr. Underwood acted as clerk of during the progress of reconstructio



GROUND FLOOR PLAN



1ST FLOOR PLAN

NEW INSURANCE PREMISES (ENGLISH AND SCOTTISH LAW LIFE ASSOCIATION). EDWARD GABRIEL (EDMESTON AND GABRIEL), ARCHITECT.

THE DESIGN OF TALL CHIMNEYS.

In a paper entitled "The Design of Tall himneys," read by Mr. Henry Adams efore the Society of Engineers, the ithor said that in designing a tall imney, one had first to consider the contions or principles governing the height. orty-five feet was an ordinary height to rve two steam boilers, but in some towns, ch as Manchester and Leeds, 90 ft. was e least allowed. Chimneys were somenes proportioned for height according the coal burnt per week of 56 hours. hus, for 4 tons per week, 75 ft. high; tons, 100 ft.; 26 tons, 120 ft.; 50 tons, o ft.; 100 tons, 180 ft.; and for 150 ns, 200 ft. Another rule was to make e height of the chimney three times the ngth of the boiler plus twice the disnce of the furthest boiler to the chimney. nis allowed 1 ft. of height for every foot e gases travelled round the boiler, and ft. of height for every foot of external ie. Again, a round chimney should not ceed 25 times its internal diameter in ight. In many modern power stations ibcock and Wilcox boilers and Green's onomizers were used; what was saved obstruction in the boilers was lost in e economizers, so that no material differce arose, but the chimney shafts were as rule only from 75 ft. to 100 ft. high and very large sectional area. For chemical orks, or in cases where poisonous fumes ere emitted, they should be higher than r ordinary steam boilers, in order to sperse the fumes at such a height that ey might be diluted to a harmless contion by the time they reached the ound. The Townsend chemical works imney at Glasgow was 454 ft. high, and as, when built, the highest in the world.

Sectional Area and Wind Pressure.

There were many different rules for the ctional area or internal diameter, some which depended upon the coal conmption only, others upon the fire-grate ea, and others upon the water evapored in a given time. Simple approximate les were (a) 1 sq. ft. area for each cwt. coal burnt hourly; (b) area equal to 10th of the total fire-grate area, each flue ing 1-5th of its fire-grate area, and the ain flue $\frac{1}{8}$ of total; (c) $2\frac{1}{2}$ sq. in. per h.p. of the engine.

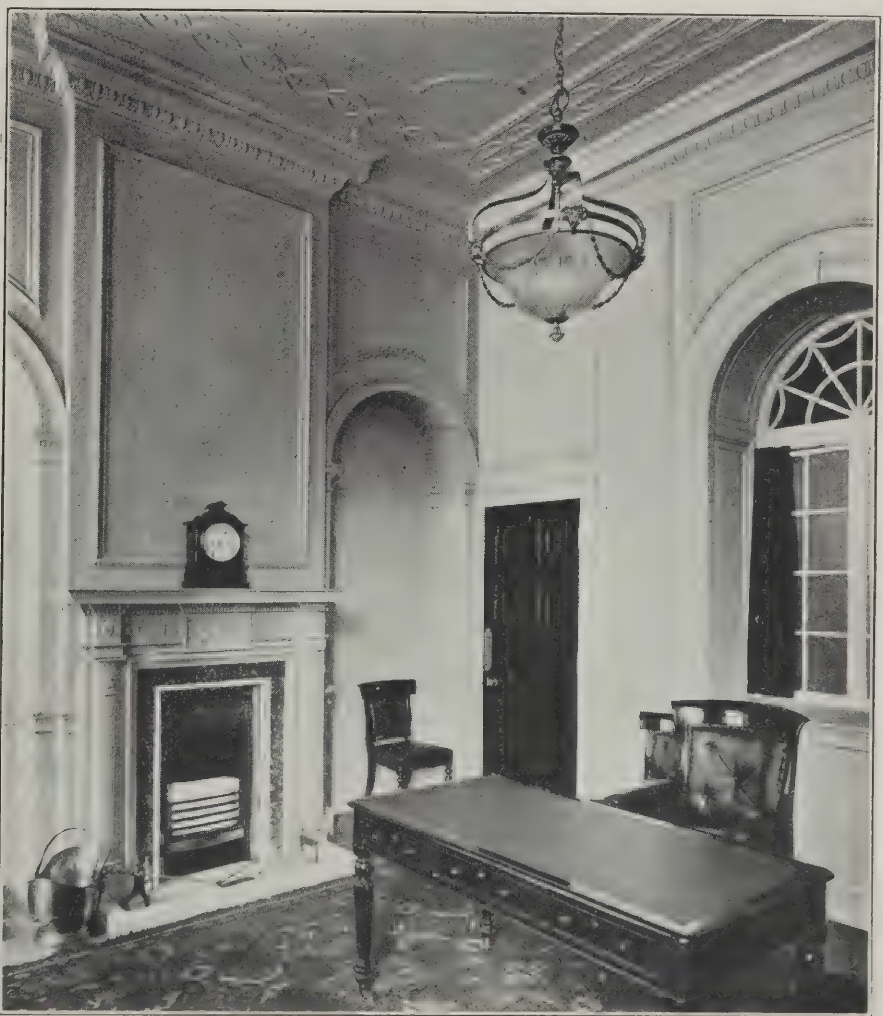
With regard to the shape, it was generly acknowledged that circular chimneys d the best appearance, at least above e pedestal, which was usually square, d from which the circular part sprung broached angles. Octagonal chimneys d the next best effect, some even conlering them more sightly than round es, while square chimneys always looked ore or less heavy, and were suitable only short stacks of large area, such as were nerally used in modern central station ork. The circular chimney was most icient for its area, as it took the least iterial, and there were no angles in which ot might cling, but with any chimney was desirable to add 2 in. all round to calculated minimum area to allow for ction. Octagonal chimneys required ecial bricks for the angles in alternate urses, in order to produce the best work. The comparative efficiency according to shape of cross section might also be nsidered from the point of view of struction to the wind, that which offered greatest obstruction requiring the eatest stability, or quantity of material, art from other considerations. It was t yet definitely settled what was the prese of the wind upon a plane surface due a given velocity, and still less was own of the effect upon a surface inclined to its direction. It would generally be quite safe, however, to allow for ordinary purposes a pressure of 56 lb. per sq. ft. on a plane surface normal to the direction of the wind, and even half of this might be sufficient in many cases. In April, 1902, the Prussian Government issued regulations for the construction of chimney stacks. Square stacks were to be designed for a wind pressure of $25\frac{1}{2}$ lbs. per sq. ft., with the centre of pressure at the centre of gravity of diametral vertical plane; octagonal stacks, 71 per cent. of the above pressure, and circular stacks, 67 per cent.

Brickwork.

Up to 150 ft. high or 5 ft. inside diameter the top length was generally one brick (9 in.) thick; above that height or diameter, the top length should be $1\frac{1}{2}$ bricks thick, and the thickness should be increased by a $4\frac{1}{2}$ in. set-off at every 20 ft. below the top. The outlet at top, and the throat or internal diameter at each set-off, should be of the calculated size to give the necessary area plus allowance for friction. Sometimes it was recommended that the top of the chimney should be contracted, to cause the expulsion of the gases at a greater velocity, and so to prevent down draught. It was said also that as the gases cooled in their passage up the chimney they required a smaller sectional area to keep the velocity uniform. In general no attention was paid to either of these theories, and the section was kept as uniform as the other requirements would permit.

If the diameter of the throat was kept uniform, and a $4\frac{1}{2}$ in. set-off occurred at every 20 ft., the intermediate portions being of uniform thickness, a batter of 1 in 53.33 would be given, but the London County Council insisted on a minimum batter of 1 in 48, and besides that it would be requisite in most cases to provide a fire-brick lining for at least the bottom 15 ft. or 20 ft., having a thickness of $4\frac{1}{2}$ in., and a clear space from the outer brickwork of $1\frac{1}{2}$ to 2 in., necessitating a still greater batter. There was also an important rule of the London County Council that "the width of a shaft at the base, if square on plan, must be at least one-tenth, and if circular on plan at least one-twelfth of the total height."

The fire-brick lining must be entirely self-supporting, and must have a clear space behind to allow for expansion and contraction independently of the main structure. This would be prevented if dirt and dust entered behind it, and it was therefore necessary to cover the top of the space by an over-sailing course of bricks built out from the inside of the main shaft, protecting the space, but allowing a clearance above the lining of $\frac{1}{8}$ in. for every 5 ft. of its height, to permit of its expansion when heated. No air bricks should be inserted in the outer wall, as was sometimes done with the idea of cooling the air space, any such openings being very detrimental to the draught. The only possible inlet for air to the chimney shaft should be through the fire bars or over the surface of the incandescent fuel. The smoke inspectors of the London County Council had lately recommended openings in the chimney shafts near the bottom so as to reduce the smoke nuisance. The real effect was to dilute the smoke with air before it reached the chimney top, so that



ALTERATIONS AT DERBY HOUSE, ST. JAMES'S SQUARE: DOCTOR'S ROOM, GROUND FLOOR. EDWARD GABRIEL, ARCHITECT.

it was not so black when expelled, but it did not reduce the actual amount of carbon emitted except so far as it tended to spoil the draught and so to reduce the fuel consumption and boiler efficiency.

Materials and Weight.

The weight of each portion of the shaft between each set-off should be obtained separately so that the figures could be used singly or together. The weight would depend very much upon the material. Many chimney shafts were built of ordinary stock bricks and ground stone-lime mortar, and might be taken at 112 lb. per cu. ft. Others were built of solid machine-pressed bricks and lias lime mortar, and might be taken at 126 lb. per cu. ft. Some builders preferred perforated radial bricks and Portland cement mortar, weighing, say, about 100 lb. per cu. ft., while others considered that cement was too unyielding and that a shaft had greater ultimate stability if it swayed slightly in a gale, which they feared the use of cement mortar might prevent. The bond usually adopted was one course of headers to four courses of stretchers, but sometimes tall chimneys were built in English bond, and occasionally in all headers.

The 450 ft. chimney at St. Rollox, Glasgow, was built in old English bond. The 300 ft. chimney at Johnson's Cement Works, Greenhithe, was built in Flemish bond. At Gosling's Cement Works, Northfleet, a 220 ft. chimney was built in stretching bond. At Barker's brick works, Worcester, the 160 ft. chimney was built with three stretchers to one header. At the Surrey Commercial Docks the 110 ft. chimney was constructed with all headers on the circular face, and for the 100 ft. chimney at Farringdon Street Goods Station, Beart's patent perforated radiating bricks were used in the circular shaft, laid with all headers on the external face.

BUILDING IN INDIA.

The visit of the King and Queen to India is naturally attracting general attention to that country; and in the current issue of "The World's Work and Play" there are several articles on the subject—among them one on "The Builder in India," by Mr. John Wallace, C.E., who gives a most interesting account of the methods and materials in vogue there.

An average building contractor in India, Mr. Wallace says, is any man who has money or credit, and who fancies the occupation. He can rarely understand drawings or measure up work, and must depend on clerks for this duty. His foremen are more of labour contractors than trade experts, and in the execution of work there is constant friction between the architect and the contractor to keep the work up to the desired standard.

A man buys a piece of land and engages an architect to design a building that will return him 8 per cent. net on his investment. He is no judge of work, and will allow only the lowest building rates for masonry, woodwork and decoration. His chief desire next to good interest is to have a showy façade.

The work of an architect who has any regard for his reputation is exceedingly laborious, for the native workman has no pride in his work. Masonry, carpentry, joinery, plumbing, and paintin are all inferior, except in special case such as the Victoria Terminus, th Bombay and Baroda Railway, and th Municipal Office, which are the work o an architect of exceptional ability an activity, who would pass no inferior workmanship.

Between builders who never see a trad journal, and care nothing for improvements, and the operatives and labourer who have the strongest aversion for an change in their methods, it is no wonde that so little improvement is made. builder will occupy the footpath of a bus street for a couple of years as a store fo building material, which is delivered prematurely instead of being brought day b day as wanted, while the interior of th building may be filled with rubbish. Th carpenters and joiners, who find their ow tools, have rarely more than a third of set, and a man will spend a day in cuttin the shoulders of sixty louvre slats tha could be finished in one hour by a sma labourer with the proper appliance.

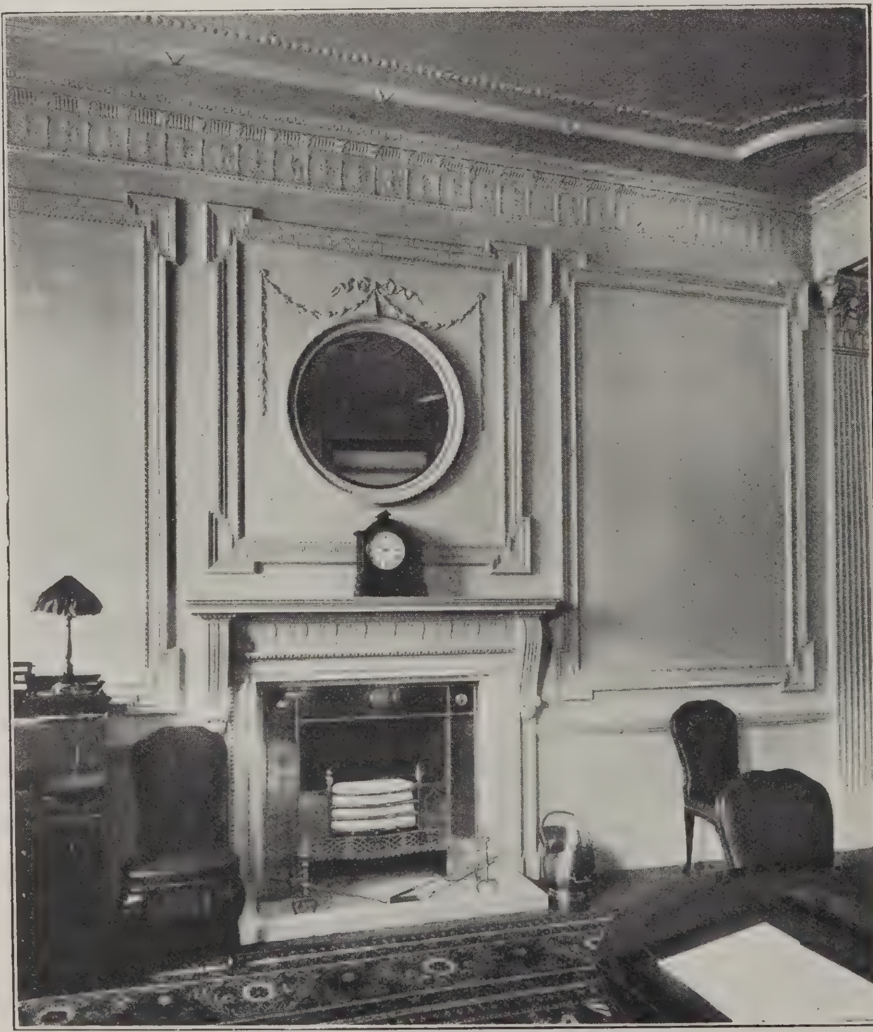
A bricklayer lays from 450 to 550 brick per day, and every other work is done i the same leisurely manner with infinit talking. The peculiarities and shortcomings of the Indian building contractor ar a source of infinite trouble to the archite and the clerk of works.

A large hotel in Bombay was nine yea under construction; steam power was use for pumping out the foundations, grindin mortar, and for cutting up scantlings, b the sawing of logs and every other wor was carried out by manual labour. Lif were established on the completion of th building, but all the material of construction was raised, even to the top of th dome, either by manual winches or o the heads of coolies who walked up an down very steep gangways of roug bamboo. There were no wood-workin machines employed except the one circul saw, and there was never a grindstone be seen from start to finish of the buildin

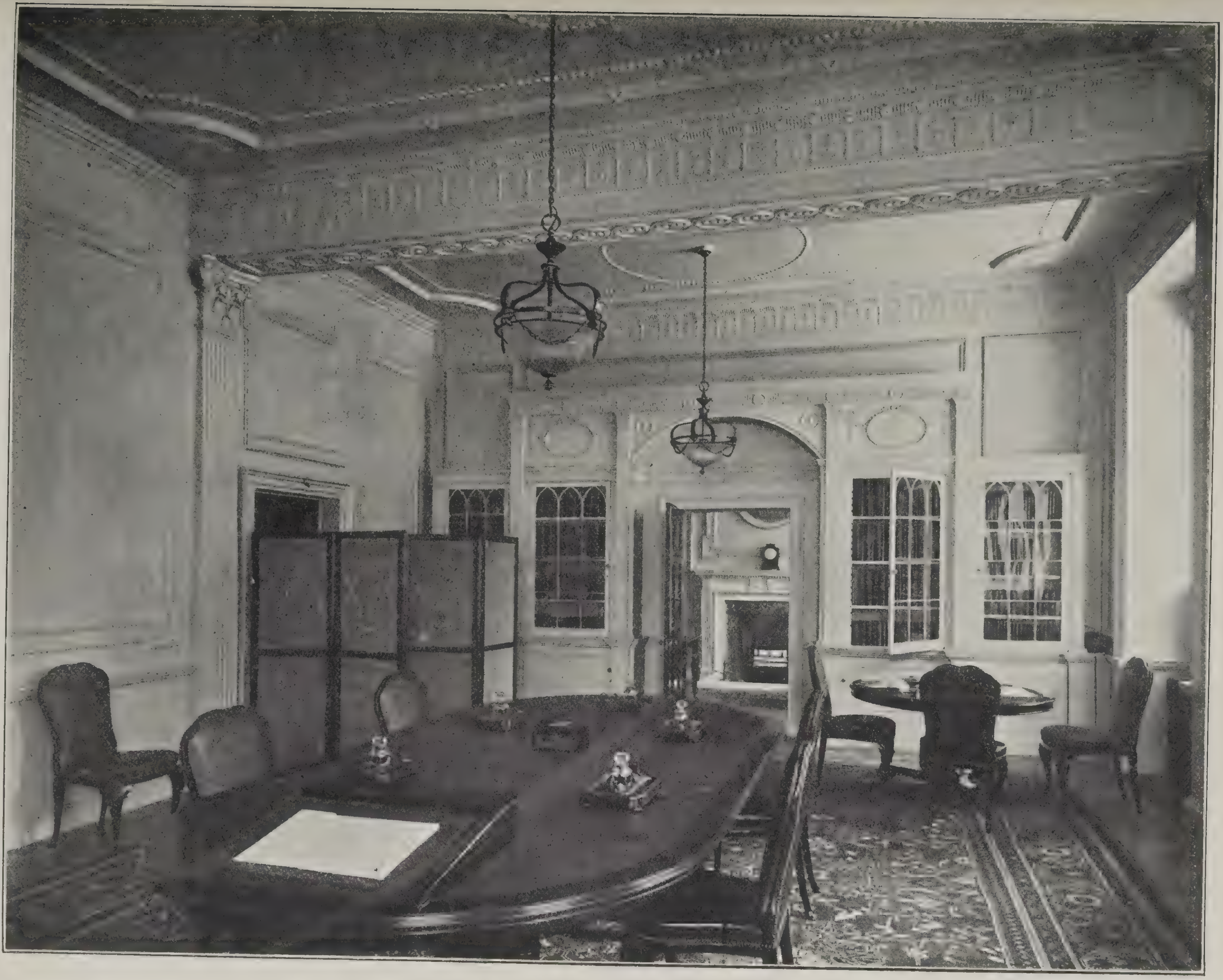
Indians who have money enough build a house often consider themselv competent to design one with the aid a building contractor. The money spe on an architect they consider wasted. Besides, the contractor is much more accommodating, for he knews that every ne notion of his client opens a way for extra

Once the plans are passed, every liber is taken with them, and the final resul are to be seen in the old houses that fa every year during the heavy rains at th break of the monsoon. Although in th new docks at present in construction eve modern appliance is used by English contractors, the native building contract stands aloof and follows the way of h fathers.

The Indian mortar mill consists of edge runner stone, working in an annul trough about 20 ft. in diameter and 18 i deep. The stone is fixed on a pole that hinged to a central pin at one end, a attached at the other to a draught anim that works on a circular path of abo 15 ft. radius. Its value complete is £1 The trough is roughly lined with mason and mortar ground in it is rarely free fro lumps. Brick joints are therefore wid and the settlement great in proportio Winches and pulley blocks are used without oil, and the favourite method of rai ing weights is lifting by rope and bloc with a gang of men, who pause after eac pull, while one of their number chan a refrain. They would probably refuse carry the load up at a run with the aid of snatch block.



ALTERATIONS AT DERBY HOUSE, ST. JAMES'S SQUARE, S.W.: CHIMNEYPIECE IN ACTUARY'S ROOM, GROUND FLOOR. EDWARD GABRIEL, ARCHITECT.



ALTERATIONS AT DERBY HOUSE, ST. JAMES'S SQUARE, LONDON, S.W.: BOARD ROOM OF THE ENGLISH AND SCOTTISH LAW LIFE ASSURANCE ASSOCIATION. EDWARD GABRIEL, ARCHITECT.

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POSITION OF ARCHITECTURE.

Professor C. H. Reilly, M.A., Roscoe rofessor of Architecture in Liverpool niversity, had the following letter in the Times" of Thursday last :—

As an architect who has been engaged r several years in training architectural udents, and who has already sent several them for further study to Rome, I re-ice exceedingly in the happy combina-on of circumstances which has enabled e 1851 Exhibition Commissioners to und there a school which in time we may pe will be comparable to the great ench institution at the Villa Medici or the newer but hardly less excellent nerican School.

Though in England we have long ffered, and particularly during the latter rt of last century, from the absence of ch a school, the present time seems to e to be an extraordinarily appropriate oment for its foundation. On the one nd, the Gothic Revival of the last de-des of the 19th century has by now gely exhausted its archæological enthu-isms, and such good results as it has had e to be found in that broader sympathy r sound and sane construction which dis-iguishes our best domestic architecture. n the other hand, a new school of neo-assic architects has grown up whose embers on every side are striving to turn e old but ever fresh *motifs* of Greek and man architecture to modern uses. These ter men in the hurry of their profes-nal life, and especially through the mpetitive system by means of which e larger proportion of their commis-ns for public buildings are now ob-ned, live to an entirely unhealthy ex-it on each other's designs as exhibited in e technical journals or on the walls of e Royal Academy. A new piece of de-l—some ingenious trick which looks at-ctive on a drawing — spreads like an idemic through the architecture of the y. To counteract this there is little or ne of that thorough study of the stand-l examples of antiquity which was so tinctive a characteristic of English hitects in the last half of the 18th and first half of the 19th centuries. John ood and Robert Adam, men who hieved not inconsiderable practice, nd time to write the volumes on lmyra and Spalatro. Good taste and nd knowledge have consequently not ot pace with enthusiasm, and a great l of modern so-called "free classical lding" is free from nothing so much as classical spirit of refinement and re-aint. The curious fact is that in erica at the present time there is a ch higher and more exact standard of te and scholarship in public and semi-lic buildings than there is with us, l there is no doubt that this is attribut-e to the greater severity and length of ir courses of study which now culmin- in their school at Rome. Although the er institution has only been founded a years, for the last half century Ameri- architects have been trained in the at tradition of the Paris school, either re or by Frenchmen imported to their n Universities.

t is reasonable therefore to hope that new British School at Rome will, as as architecture is concerned (and I feel e the same will apply to the allied s), serve as a focus for what at present are somewhat stray and even misdirected enthusiasms, and that the work of its students will react on that of the whole profession. This would no doubt be much more likely to happen if our Government would do what the French Government does, and give at once, on the return of a Prix de Rome student, some commission either for the preservation of an old or even for the erection of a new building. The men who hold these scholarships will necessarily start their professional careers later than their colleagues; it is for the good of every one that this should not prove a handicap.

In conclusion it is interesting to remember that a good many people have been accustomed to date the modern decline of all the arts in England from the opening of the 1851 Exhibition, and the blow it struck at all tradition. There is therefore a certain fitness, probably not unfelt by the Commissioners themselves, that its surplus profits should now go to the founding of an institution from which as much good to the arts may reasonably be expected to result.

THE LONDON MANSION HOUSE.

As we have already announced, the Mansion House of the City of London is in need of thorough overhauling. Many suggestions are being made as to what shall be done with it. One is that the interior shall be entirely re-planned; another is to adapt the ground floor for civic functions or entertainments by removing the kitchens to the roof; and there is a third proposal which would involve the removal of the Mansion House and the sale of its valuable site.

It is said that the ground on which the Mansion House stands is the most valuable in the City, and that the sum involved runs far into the second million. The site of the Old General Post Office is being talked of, but it is said that there is still a further solution which we understand will be brought before the Court of Common Council at an early date. Workmen had to be summoned to the Mansion House last week as small portions of the stonework in front of the building began to fall on the steps and the pavement below.

According to a writer in the "Morning Post," it took the Common Council from 1728 to 1730 to make up its mind to build a Mansion House—although Evelyn suggested one in 1666 after the Fire—and the matter then languished until 1734. The site was difficult to settle, and again pamphleteers and versifiers wrote much advice. The Stocks Market was ultimately settled upon, and another argument followed upon the question of design. Lord Burlington, then a well-known patron of the arts, endeavoured to secure the adoption of a plan of Palladio; but this was settled by the speech of a deputy, who "gravely observed" that Palladio was a Papist, and incapable of being a Freeman. On this ground Lord Burlington's suggestions were thrown out, and the design of Dance, "the Clerk of the City's Works," accepted.

When work began it was found that the ground was full of springs, and piles had to be driven to secure a foundation. The site was at the junction of the old Lang-bourne and the Wall Brook. Scandal followed in connection with a contract for masons' work, which was given to an "insider." The Aldermen interfered, the question of the veto flared up, a stop was put to the work, and a tract with a title of no fewer than 94 words made its appearance.

Then followed a somewhat similar difficulty in connection with the timber supply. A Mr. John Cordwell, a carpenter and a member of the Court of Common Council, was concerned in "a combination to raise the price of piling and planking." Upon this the Court, on April 17, 1739, passed a resolution, declaring that the said Mr. Cordwell "grossly abused the office and trust reposed in him," and a Bill (the Court of Common Council is a legislative assembly) was ordered to be brought in to prevent members being concerned in any works belonging to the City and the Bridge House. Again a tract was written and published.

The building was completed in 1753, and Sir Crisp Gascoigne was the first Alderman to occupy it.

Even then the citizens were not satisfied. It was said of the architect :"The man pitched upon was originally a shipwright, and to do him justice he appears never to have lost sight of his real profession. The front of the Mansion House has all the resemblance possible to a deep-laden Indiaman, with her stern galleries and gingerbread work. The stairs and passages are all ladders and gangways, and the super-structure at the top answers pretty accurately to the idea we usually form of Noah's Ark." Nor did the house give satisfaction to its occupants. Built in the form of an Italian palace, with a central courtyard, it was said to be damp and inconvenient. About 1790 the complaints were so loud that the General Purposes Committee considered the question of building a new mansion house. Instead, however, they roofed in the courtyard and made the present saloon and carried out several other alterations and improvements. The foundations, however, gave constant trouble, and during the first half of the nineteenth century large items appear in the City's accounts for works upon them. In 1810 the present police court was made, and in 1847 the side entrance in Walbrook was converted to its present use from a stable. Of late years matters have settled somewhat, but in 1888 the drainage had to be modernised at a cost of £2,000.

THE KING EDWARD MEMORIAL.

In the House of Commons last week, Captain Murray asked Mr. Dudley Ward, as representing the First Commissioner of Works, whether at the recent meeting of the King Edward Memorial Committee any decision was arrived at as to a site for the proposed memorial. Mr. Dudley Ward, in reply, said: "The proposal is to erect the Memorial at the Piccadilly end of the Broad Walk in the Green Park —the spot indicated in the various answers given in this House on July 19th last." Captain Murray asked if the Government had actually given assent to the site; Mr. Dudley Ward said they had not, and stated further that the Government saw no objection to the site, but before a decision could be arrived at it must receive the assent of the Memorial Committee, then of the First Commissioner of Works, and before anything is finally settled the plans will have to be exhibited in the House. Captain Murray then asked if before assent was given the House would have the opportunity not only of discussing but of giving a verdict; to which Mr. Dudley Ward said: "Yes; I understand that is so."

L.C.C.'S PROPOSED REGULATIONS FOR REINFORCED CONCRETE BUILDINGS.

Last week, at p. 604, we reproduced a portion of the regulations with respect to the construction of buildings wholly or partly of reinforced concrete, and with respect to the use and composition of that material, as drafted by the London County Council in pursuance of the powers derived from Section 23 of the London County Council (General Powers) Act, 1909. Paragraphs 1 to 23 were then reproduced, and the sequence is now resumed.

Bending Moments.

24.—For the purpose of ascertaining the bending moments the effective span shall be taken.

25.—In the case of non-continuous beams, the effective span shall be taken as the distance between the main vertical sides of the piers, pillars, or walls, plus the depth of the beam at the supports, or the span between the centres of the necessary bearing surfaces, whichever may be the lesser.

26.—In the case of continuous beams, the effective span shall be taken as the distance between the centres of the supporting beams, piers, pillars or walls.

27A.—Bending moment at the fixed end of a cantilever with a single concentrated load at the free end—

$$B = Wl$$

where W = weight.
l = length of effective span.

B = Bending moment at any given cross-section.	Condition of supports	B for shorter span.	B for longer span.
B at *centre* of span = B_c ..	Free ..	$\frac{Wb}{8} \cdot \frac{1}{1+\left(\frac{b}{l}\right)^4}$	$\frac{Wl}{8} \cdot \frac{1}{1+\left(\frac{l}{b}\right)^4}$
B at *end* of span = B_e	Fixed ..	$\frac{Wb}{12} \cdot \frac{1}{1+\left(\frac{b}{l}\right)^4}$	$\frac{Wl}{12} \cdot \frac{1}{1+\left(\frac{l}{b}\right)^4}$
B at *centre* of span = B_c ..	Fixed ..	$\frac{Wb}{24} \cdot \frac{1}{1+\left(\frac{b}{l}\right)^4}$	$\frac{Wl}{24} \cdot \frac{1}{1+\left(\frac{l}{b}\right)^4}$

TABLE I.

27B.—Bending moment at the fixed end of a cantilever with the load uniformly distributed—

$$B = \frac{Wl}{2}$$

27C.—Bending moment at the centre of a beam with both ends freely supported and a single concentrated load at the centre—

$$B = \frac{Wl}{4}$$

27D.—Bending moment at the centre of a beam with the ends freely supported and the load uniformly distributed—

$$B = \frac{Wl}{8}$$

27E.—Bending moment at the supports and at the centre of a beam with both ends fixed and a single concentrated load at the centre—

$$B = \frac{Wl}{8}$$

27F.—Bending moment at the fixed end of a beam with one end fixed and one end supported and the load uniformly distributed—

$$B = \frac{Wl}{8}$$

27G.—Bending moment throughout the middle half of the span of a beam with one end fixed and one end freely supported and the load uniformly distributed—

$$B = \frac{Wl}{10}$$

27H.—Bending moment at the ends of a beam with both ends fixed and the load uniformly distributed—

$$B_e = \frac{Wl}{12}$$

27I.—Bending moment at the centre of a beam with both ends fixed and the load uniformly distributed—

$$B_c = \frac{Wl}{12}$$

28.—The effective span of slabs shall be taken as the clear span plus the thickness of the slab.

29A.—Bending moment across the centre of a square slab supported on four edges and reinforced in two directions at right angles to each other with load uniformly distributed—

$$B = \frac{Wl}{16}$$

29B.—Bending moment along the edges of a square slab fixed along four edges and reinforced in two directions at right angles to each other with reinforcements bent up over the supports, the load being uniformly distributed. [See Table I.]—

$$B = \frac{Wl}{24}$$

29C.—When the length of a slab exceeds twice its breadth no allowance shall be made for support in the direction of the length of such slab.

29D.—For other ratios of length to breadth, the bending moments shall be found by the following formulas—

W = Weight on slab (total distributed weight, including its own weight).
b = *breadth* of slab.
l = *length* of slab.

30.—The spacing of the reinforcemer in slabs under a uniform distributed loa may be gradually increased from th middle third of the slab towards the out edges of the slab provided—

(*a*) That the spacing at the out edges be not greater than thr times the spacing at the cent of the slab ;

(*b*) That the bars or strands of t reinforcement be of unifor diameter or thickness througho the cross-section of the slab.

31.—End spans of a series of co tinuous beams or slabs shall only be co sidered as fixed at the extreme ends wh adequate provision is made for taking the stresses which would be induce in the beam or slab and its supports.

32.—For every condition of loading n herein specified, the bending mome and stresses for beams or slabs must calculated by the accepted formulas modern engineering practice.

Working Stresses.

33.—Except as provided for in pillar the safe working stresses on concre shall not exceed the following. [S Tables II. and III.] :—

Stresses on mild steel complying with the British Standard Specification.	Pounds p square i
Direct compressive stress = *m c* where *m* = modular ratio, and *c* = safe working compressive stress (in pounds per square inch) on concrete surrounding the steel ..	*m.c.*
Direct tensile stress on mild steel in longitudinal members	17,000
Tensile stress in web-reinforcement	12,000
Shearing stress on mild steel ..	12,000

TABLE III.

35.—Provision shall be made for t stresses due to eccentric loading.

36.—The algebraic sum of the stres in any member subject to eccent loading shall not exceed the maxim permissible direct stress.

37.—The term "combined stresse when used in these regulations shall me the algebraic sum of all the stress eccentric and direct, and any ot stresses due to any cause or causes.

Stresses on concrete.	Proportion by volume.					
	Cement.	Sand.	Coarse material.	Cement.	Sand.	Coarse material
	1	2	4	1	1½	3
	Stress in pounds per sq. in.			Stress in pounds per sq. in.		
Direct compressive stress	600			700		
Extreme fibre stress	600			700		
Frictional stress between concrete and steel	100			100		
Shearing stress on plane sections ..	60			60		
Tensile stress ..	nil.			nil.		

TABLE II.

Neither the steel nor the concrete hall be subjected to combined stresses which together exceed the maximum ermissible direct stress.

38.—Every member subject to alterating tensile and compressive stresses hall be designed and proportioned to esist the maximum for each stress.

39.—All joints in or between reinforced oncrete members shall be designed and rranged so that the stresses which may ome upon them shall be within the limits llowed by these regulations.

40.—The concrete may be assumed to ake up a shearing stress of 60 lb. per quare inch, but any remaining shear hall be provided for by the reinforceent.

Grip Length.

41.—The grip length or adhesion length f a bar embedded in concrete shall be easured along the bar from any given ross section to the end of the bar.

42.—The grip or adhesion length (in ches) shall not be less than

2.5 td for round or square bars, or

$\frac{5\,bdt}{b+d}$ for rectangular bars,

here

b = the *breadth* of the bar in inches.

d = the least *diameter* of the bar in inches.

t = the *tensile* stress (in thousands of pounds per square inch) at the given cross section.

Additional security shall be provided y fish-tailing the ends of the bars or by ending the ends of the bars into a **J** rm, or by mechanical bond.

In the case of a bar having mechanical ond the least diameter of the bar may e measured from outside to outside of e transverse projections provided—

(*a*) That the transverse projections are not further apart (centre to centre) than twice the normal diameter of the bar;

(*b*) That the height of such projections above the normal surface of the bar shall be at least $\frac{1}{16}$th of an inch on all bars exceeding one-half inch in diameter and $\frac{1}{32}$nd of an inch on all bars not exceeding one-half inch in diameter.

Modular Ratio.

43.—The term "modular ratio" (m) eans the ratio of the elastic modulus of eel to the elastic modulus of concrete.

44.—The elastic modulus for steel in nsion or compression shall be taken thirty million pounds per square inch.

45.—The elastic modulus for concrete compression or tension shall be taken two million pounds per square inch.

46.—The modular ratio for steel and ncrete shall be taken at 15.

PART III.

BEAMS.

47.—The term "beam" shall include y beam, girder, lintel, bressummer or ntilever, or any other similar member rrying transverse loads.

48.—The least diameter or thickness of e longitudinal bars in beams shall not less than one-quarter of an inch. iring may be used solely for holding the rs during the process of placing the ncrete in position.

49.—All other reinforcements in beams all be at least one-eighth of an inch in ameter or thickness.

50.—There shall be a distance of at st one inch between the bars in beams cept at joints or in cases where the bars bound close together throughout the length in contact and have both ends properly turned up in the form of a hook.

51.—The maximum distance between the bars of the tensile reinforcement in beams shall not be greater than twelve inches.

Compressive Reinforcement.

52.—Where compressive reinforcement is provided in beams the sectional area of the beam in the plane of the reinforcement may be assumed to be increased by fourteen times the cross sectional area of the steel in compression.

53.—Where compressive reinforcement is provided and calculated to take part of the compression it must be anchored by bars extending through the middle third of the effective depth of the beam.

54.—The anchors shall not be further apart (centre to centre) than the effective depth of the beam.

Shear Reinforcement.

55.—All beams shall be provided with adequate shear members and such shear members shall—

(*a*) Be spaced according to the distribution and intensity of the shearing stresses, but the distance from centre to centre of the shear reinforcement at any part of the beam shall not exceed the effective depth of the beam.

(*b*) At least extend from the centre of the tensile reinforcement to the centre of pressure in the concrete under compression.

(*c*) Be passed under or round the tensile reinforcement or be otherwise secured thereto.

(*d*) Have a mechanical anchorage at both ends, or they shall have a mechanical bond with the concrete throughout their length.

Splays and Brackets at end of Beams and Bracketted Work.

56.—In cases where splayed work is provided under the ends of beams such work shall be in addition to the support required by these regulations.

57.—In cases where bracketted work is necessary and provided to carry loads, it shall be reinforced sufficiently to provide for the stresses due to such loads.

Slabs.

58.—The effective depth of slabs shall be measured from the compressed edge of the constructional concrete to the centre of gravity of the tensile reinforcement.

59.—The least diameter or thickness of main reinforcing bars in slabs shall not be less than one-quarter of an inch. Wiring may be used solely for holding the bars during the process of placing the concrete in position.

60.—All other reinforcement in slabs shall be at least one-tenth of an inch in diameter or thickness.

61.—There shall be a distance of at least one inch between bars in slabs except at joints and at points where the bars are in direct contact and transverse to one another.

62.—All meshed reinforcement shall be of such dimensions as will enable the coarse material in the concrete to pass easily through the meshes of such reinforcement.

63.—The maximum distance between bars or strands of the tensile reinforcement in slabs shall not be greater than twelve inches.

RESISTANCE MOMENTS.

64.—The resistance moment of reinforced concrete construction under transverse loads shall be determined by formulas based on the following assumptions—

(*a*) All tensile stresses shall be taken by the steel.

(*b*) The strain in any fibre is directly proportionate to the distance of that fibre from the neutral axis.

(*c*) The tensile elastic modulus of concrete shall be assumed to be equal to the compressive elastic modulus of that material.

(*d*) The elastic moduli of the concrete remain constant within the limits of the working stress.

(*e*) The stress-strain curve or graph is a straight line.

(*f*) The grip between the concrete and steel is sufficient to make the two materials act together.

65.— *Notation.*

A_t = *Area* of *tensile* reinforcement (in square inches).

a = the *arm* of the resistance moment (in inches).

B = *Bending* moment of the external loads and forces.

b = *breadth* of rectangular beam in inches, or the breadth of the flange of a tee beam in inches.

c = *compressive* safe working stress on the extreme edge of the concrete in compression (in pounds per square inch).

d_s = total *depth* of *slab* in inches.

d = the effective *depth* of the beam in inches, *i.e.*, the distance from the compressed edge of the constructional concrete of the beam to the common centre of gravity of the tensile reinforcement.

E_c = *Elastic* modulus of *concrete* in compression.

E_s = *Elastic* modulus of *steel* in tension

l = the *length* of the effective span of a beam.

$$m = \frac{E_s}{E_c} = 15 = \textit{modular}\text{ ratio.}$$

n = the distance of the *neutral* axis from the compressed edge of the constructional concrete of the beam (in inches).

$$n_{,} = \frac{n}{d} = \textit{neutral}\text{ axis ratio, } \therefore n_{,} d = n.$$

p = the *percentage* of tensile reinforcement = $100r$.

R = *Resistance* moment of the internal stresses in the beam.

$$r = \textit{ratio}\text{ of } A_t \text{ to } bd, \text{ i.e., } r = \frac{A_t}{bd}$$

and $A_t = rbd$.

$$s_{,} = \textit{slab}\text{ depth ratio} = \frac{d_s}{d}$$

t = *tensile* working stress on steel in tensile reinforcement (in pounds per square inch of cross section).

W = the total *weight* to be carried by a beam.

Rectangular and Tee Beams.

66.—In the case of rectangular beams and tee beams when the neutral axis is within the slab, i.e., tee beams in which r is less than $\frac{s_{,}^2}{2m\ (1 - s_{,})}$ the position of the neutral axis shall be obtained from the equation:

$$n_{,} = \sqrt{(m^2 r^2 + 2mr)} - mr$$

and

$$n = [\sqrt{(m^2 r^2 + 2mr)} - mr]\, d$$

67.—The mean compressive stress on the concrete shall be taken at $\frac{c}{2}$.

68.—The arm of the resistance moment shall be obtained from the equations—

$$a = d - \frac{n}{3} \text{ or}$$

$$a = d\left(1 - \frac{n_{,}}{3}\right)$$

(*To be continued*)

BUILDING INTERESTS IN SOUTH AFRICA.

Specially written by our South Africa Correspondent.

Johannesburg, November 6th, 1911.

Art Gallery.

The foundation stone of the Art Gallery to be erected in Joubert Park was laid this month by the Mayor of Johannesburg. The complete designs are expected to arrive shortly from Mr. Lutyens, when tenders will be immediately called for the work. The first portion is to cost £20,000, and will comprise the main central block. The four wings are to be erected later.

Rand Boulevard.

At the annual meeting of the Transvaal branch of the Society of Architects held last week, Mr. E. H. Waugh, the new President, made some interesting remarks regarding the want of uniformity in the buildings of Johannesburg. Incidentally he mentioned that we might have a grand boulevard as an entrance to the town, and he placed this somewhere near Bree Street. This is a street that wants a great deal of beautifying, and is the locality of the worst "mixed" architecture in the town, wood and iron shanties predominating and greatly disfiguring some parts of it. To make a boulevard of Bree Street would mean its rebuilding entirely, and this seems likely, as plans have recently been passed for some handsome structures to be erected. It is expected that in the future Bree Street will become a popular business centre.

New Town Hall.

There has been considerable discussion lately regarding the new Town Hall for Johannesburg. Some people are clamouring to have it erected in the centre of the Market Square, which seems a most sensible idea, but it appears that it is not feasible owing to the advanced state of present arrangements. It is much to be feared that the setting or frame work, so to speak, will greatly detract from the general effect to Messrs. Hawke and McKinlay's plans, and that the beauty of the Town Hall will pass unheeded on account of the narrowness of the streets abutting, and by reason of the traffic continually surging round them, wayfarers will have little or no time to spare even to cast a passing glance at it.

A Lost Opportunity.

Says "The African Architect" a magnificent opportunity was lost when, instead of reserving Von Brandis Square for one magnificent building placed in the centre, it was cut up and structures of a totally dissimilar style of architecture dotted over its surface. There is now only one open space in Johannesburg, the Union Ground, and that is being severely left alone. It could, however, easily be turned into an attractive pleasaunce instead of, as at present, a wind-swept stretch of dusty soil.

Pretoria Church Square.

The metamorphosis that is taking place in the Church Square at Pretoria is being watched with much interest by all who have the welfare of our cities at heart, for it is the first experiment in South Africa on an extensive scale of the beautifying of a city by means of landscape gardening. Church Square is an ideal site for an experiment of this kind, sloping gently from south to north, and with an abundance of water within a few feet of the surface. The experiment will demonstrate the value of landscape gardening as an adjunct to architecture. But its chief value will be in educating the masses as to what can be done in turning waste places into oases of beauty, for even if they are unable to appreciate it for its sheer beauty, they will find that it enhances the value of their property, and they will thus be prepared to spend the money in this direction.

Trade in Durban.

Although there is nothing like a boom on in building at Durban, the state of the trade during the past month or two has been satisfactory, the principal firms having enough work on hand to keep their regular men going constantly. During the gala season, from June to the end of August, there was little new work undertaken, but this is the usual state of affairs at that period, people apparently being unwilling to trench upon the holiday mood. However, on big works, like the new Durban Technical Institute, the new Law Courts, and the extensive alteration required to convert the old Town Hall into the Post Office, large numbers have been employed, and it may be said that neither employers nor men have much cause to grumble at the present position.

Technical Training.

In 1908 the Witwatersrand Central School Board, at the request of the Transvaal Education Department, held an enquiry on the advisability of establishing a Trades School for Johannesburg. The report of the Board framed after discussion with representative bodies and persons was in effect a strong recommendation that such a school should be provided by the Government. It was felt that the school should occupy a central position within easy reach by train and tram; and it was finally decided that the vacant ground in Smit Street, lying almost directly north of the Wanderers, and extending back to De Korte Street, which had been reserved for educational purposes, fulfilled most nearly these requirements. The double-storeyed building which has been erected is in brick, with freestone dressings, the architectural treatment being in harmony with the uses to which the institution is to be put.

Architects and Coloured Labour.

The question of coloured skilled labour is one that must constantly spring up in South Africa, and the Rand Municipal Election campaign has presented another opportunity of bringing it prominently to the public view. The following is the substance of a chat which a representative of the "Rand Daily Mail" had on the subject with Mr. R. Howden, President of the Transvaal Association of Architects (Incorporated): Mr. Howden informed the "Mail" man that fully 90 per cent. of the members of that Association are alive to the danger and in strong sympathy with the movement to stop the encroachments of colour. Their difficulty is that being an incorporated Association they have only limited powers, and cannot bind their members by a resolution to include in all conditions of contract a clause making the employment of white labour compulsory. And the fact that there are some few practising architects who seem prepared to sacrifice the interests of the European section of the population for the sake of cheapness is a most disturbing factor. One of the difficulties is, says Mr. Howden, the fact that as a result of the competition of the cheap coloured man people have got into a loose way of using the words carpenter, bricklayer, mason, and so forth. The skilled man who has served his time at these trades is supposed to know a hundre and one things which would surprise th ordinary individual, whereas the gre bulk of the coloured workmen—althoug described as carpenters, bricklayer masons, plasterers, etc.—are really on navvies. They have picked up a smatte ing of the trades, but it does not follo when they can lay a brick or use a trow that they are tradesmen. And the regre table thing, not only because of the ba quality work, but because of the influen it has on the whites in the trades, is th this sort of thing passes muster in Joha nesburg. Obviously all the sentiment the world cannot save the situation when is a matter of £ s. d. to the men who ha no scruples about employing colour labour, and Mr. Howden, in common wi all who have had personal experience the problem, agrees that legislation at early date is imperative.

Trade Generally.

In concluding this letter, I may say th generally speaking the building tra throughout South Africa is good. Builde on the Rand are all busy, and at the coast towns the same thing applies. The Uni Government has a great amount of wo in hand, including the magnificent a ministrative buildings at Pretoria.

NEWS ITEMS.

London County Hall.

It is expected that the central block f the new County Hall will be ready ir occupation in 1916.

New Riding School at Chelsea.

A new riding school is being built t the Duke of York's headquarters, Kins Road, Chelsea, by Messrs. E. A. Roo and Co., of 36, Basinghall Street, E., and Homerton, N.E.

Huge New London Hotel.

The Strand Hotel Co., Ltd. (over wh Sir Joseph Lyons presides) propose build a huge new hotel in Regent Stre containing upwards of 1,000 bedrooms, gether with lounges and reception roo Building operations will be commen next year.

Advance in Price of Gunmetal, Brass, Copper Goods.

Owing to the increased cost of ma facture, Messrs. Twyfords, Ltd., annou that they are compelled to make advance of 10 per cent. in the price gunmetal, brass and copper goods. prices for cast-iron goods remain altered.

The Victoria Memorial and Its Wa Basins.

Owing to the impurities of the wa drawn from the lake in St. James's Pa the marble basins of the Vict Memorial became discoloured, and quired continual cleaning. To rem this defect wells are now being s on one of the islands in the lake, a reservoir made for the supply of memorial fountains.

A Notable New Building.

The new building for the Royal Soc of Medicine, which is being completed a site near Wimpole Street, from desi by Messrs. John Belcher, R.A., and J Joass, F.R.I.B.A., is a particularly example of modern architecture. frontage is massive and dignified,

thin the building are several noble
artments, more particularly the pillared
trance hall, and the library, which lat-
extends the whole length of the build-
g on the first floor. The total cost of
e premises is put at £35,000.

New Keeper of the Royal Academy.

At a General Assembly of Academicians
st week, Mr. A. C. Gow, R.A., was
ected Keeper of the Royal Academy.
r. Gow, who succeeds the late Mr.
rnest Crofts, R.A., has exhibited con-
uously at the Royal Academy since the
ar 1869. He is 63 years of age, was
ected A.R.A. in 1881 and R.A. ten years
ter.

Change of Address.

The Birmingham Guild, Ltd., have
oved their London office and studios
om 7, Newman Street, W., to 33, Percy
reet, W. (telephone 6657 Gerrard), and
future their London representative will
Mr. Wallis Halford, who formerly
presented the firm's interests in Scot-
nd. Mr. S. Stone is no longer in their
nploy.

The Future of Carnarvon Castle.

Several suggestions regarding the use
which Carnarvon Castle should be put
the public interest have been formu-
ted by a committee of the Carnarvon
own Council. Subject to the approval
the Council, a memorial is to be pre-
nted to the Commissioners of Works,
10 have absolute control of the building,
ggesting the rebuilding of the old
nqueting hall and the establishment
erein of a National Art Gallery in com-
emoration of the Investiture of the
ince of Wales.

Liverpool Cathedral Reredos.

The Executive Committee of the Liver-
ol Cathedral, at their meeting on
ecember 4th, had before them Mr.
ilbert Scott's design for the new reredos,
hich is being given to the Cathedral by
rs. Marke Wood in memory of her
isband, the late Mr. Marke Wood, a
ealthy Liverpool shipowner. The design,
hich was approved, shows a reredos
out 50 ft. in height, occupying
e whole width of the sacrarium in
e sanctuary of the main building, the
act spot where it is to be placed being
mediately below the Ismay memorial
indow. Its cost will be about £10,000.

The Y.M.C.A. Building in Tottenham Court Road.

The new premises of the Young Men's
hristian Association at the junction of
xford Street and Tottenham Court Road
ill be completed within the next few
eeks. The building provides accommo-
ation for 10,000 young men. There are
o bedrooms, which will be reserved for
uths from the country who have to live
a weekly salary of 15s. or less. The
nt of these bedrooms is 3s. 6d. a week.
the basement there are gymnasia, a
lle d'armes, a swimming bath, a bowling
ley, a library, and a lounge. On the
st floor is a large reading-room, and
ove this is the educational department,
hich includes examination and class-
oms, laboratories, libraries, and a photo-
aphic section. The cost of the site and
ructure has been £200,000. Mr. Rowland
umbe, F.R.I.B.A., is the architect.

ST. GEORGE'S HALL, LIVERPOOL.

The controversy with regard to St. George's Hall, Liverpool, has again become active. The Liverpool King Edward VII. Memorial Committee have brought forward a scheme which, while slightly different from that which aroused such a storm of opposition early in the present year, persists in the interference with the podium which is of the essence of the objection. The scheme provides for the substitution of steps for the podium, a portion of which, however, will be left to flank the steps, while on the corner nearest Lime Street the King's statue is to be placed, the other corner, next to St. John's Gardens, being reserved for future use.

The scheme has been unanimously approved by the Finance Committee, and it is stated that Mr. Norman Shaw, R.A., Mr. John Belcher, R.A., Mr. Hamo Thornycroft, R.A., and Sir L. Alma-Tadema, R.A., have all signified approval. Mr. Norman Shaw has written the following letter on the subject:—

"The proposal to place the memorial of his Majesty King Edward VII. at the south end of St. George's Hall is one which meets with my unqualified approval. No finer site could be found in the city, and it is in complete harmony with the spirit of the building.

"To place Sir William Goscombe John's equestrian statute of the King, however, on the wall which now, and for many years past, has disfigured the south end of St. George's Hall, would be unsatisfactory and incomplete.

"What is needed is a unified scheme embracing a proper and dignified access by a fight of steps to the main entrance of this noble portico—a most essential part of Elmes's design.

"It is amusing, to say the least of it, to hear how persistently this wall is considered to be an important part of Elmes's work, and that touching it is to be regarded as a serious interference with his building. Let it be remembered that Elmes never set eyes on it, and if he had would have condemned it as heartily as so many of us do now. He had not more to do with this wall than I had; for some local builder whose name will not be handed down to posterity (as it is not known!) is credited with having achieved it.

"I cannot for a moment believe that Professor Cockerell ever dreamt of this gratuitous addition to his predecessor's fine building. Elmes was an undoubted genius—lost to us all too soon—and Professor Cockerell was beyond all question the most distinguished architect of the last century. To suppose that these two men, both artists to their finger tips, designed a splendid state entrance to a great and important building, and then deliberately arranged for a wall 15ft. high, rendering all direct approach to the portico impossible, is too absurd an idea to be tolerated for a moment. What would be said were a wall to be built round the western steps of St. Paul's Cathedral, and worshippers invited to find their way in by some shabby little doors in the flanks? Wren designed his west portico and its steps to be the principal entrance to the Cathedral, and Elmes did exactly the same. Any arrangements which could be devised to secure this most desirable result would, I am sure, be in accordance with both Elmes's and Cockerell's views, were they here to express them.

"In connection with this controversy, in which, I regret, much acerbity has been introduced, I am reminded of a saying of Professor Cockerell's, 'Be an artist among gentlemen—and a gentleman amongst artists.' Had this axiom been followed we should, I believe, have been saved from much that, to me, savours of an unhappy squabble."

Professor C. H. Reilly, of the Liverpool School of Architecture, is reported as having said, in the course of an interview with a representative of the "Liverpool Daily Post," that while in his opinion the new scheme is infinitely better than that which Mr. Norman Shaw formerly approved, he (Professor Reilly), like many other architects, would rather see St. George's Hall left severely alone. He thought also, that (1) such a flight of steps as is now proposed implies a fine open space in front, such as you see, for example, before the Madeleine or the Chamber of Deputies in Paris. In short, an axial road or a great "place" involving street-levelling and the demolition of the buildings opposite is demanded. Secondly, to make the revised design effective, great internal alterations would be necessary. If you have a commanding flight of steps, you ought to have, instead of the existing blank wall, just inside the entrance gates, a clear opening into the great hall. In other words, both the inner hall and the Crown Court should be swept away. Then, the pedestals to the two proposed new statues ought, of course, to be carried out with strict classic detail, and this the published illustration hardly suggests. If all this were done, and if the hall, now perfect, must needs be touched, the revised scheme would be a good one, though very costly.

The subject is dealt with in an editorial note in the present issue.

POINTS AS TO PRODUCTION AND TESTING OF CEMENT.

Mr. Bertram Blount, in his second lecture on cement delivered before the Institute of Chemistry, pointed out that, owing to our limited knowledge of the chemistry of cement, it was necessary to resort to physical and mechanical tests in order that the user might be able to satisfy himself that the product would meet the demands laid upon it. From their very nature, such tests must be arbitrary, and to ensure uniformity they must be carried out under standard conditions which would satisfy the requirements of the consumer and not lay too heavy a burden on the producer. Since cement was not deliberately used under tension, it would appear at first sight to be more logical to appraise its mechanical strength by compressive rather than tensile tests; but, as all the tests were merely used as a basis for comparison, and the errors inherent in compression tests largely invalidated the results, it had become customary to omit them in favour of tensile tests of either the neat cement or of mixtures of cement and sand of a given degree of fineness.

Much prominence had been given to the advantage of testing mixtures of cement and sand, on the ground that such a method approximated more closely to the conditions obtaining in actual practice, while, on the other hand, it could equally be urged that the sand prescribed by any standard specification would differ widely both in size and shape from the aggregate usually employed on a commercial scale. For the user of cement the question of soundness, i.e., the property of remaining constant and unalterable in volume, must always be of paramount importance, and justified the decision of the British Standards Committee in adhering to the simple Le Chatelier test, which had not infrequently been subjected to severe and rather adverse criticisms in some countries.

The methods prescribed in the standard specifications of to-day were virtually the same as those laid down some seven years ago, and the quality and uniformity of the modern product had been so well maintained that almost the only alterations were in the direction of increased stringency, without thereby laying an unreasonable task upon the producer. The information obtained from the ordinary physical and mechanical tests was sufficient for all practical purposes, and probably would not be usefully augmented until some methods were devised for determining the proximate composition of cement and the setting time of concrete. That the former of these had not yet been realised was shown by the fact that, in spite of numerous attempts, no trustworthy method existed of ascertaining the content of so-called "free lime" in cement.

In regard to the economic side of the subject, it was pointed out that mainly through the introduction of the rotary kiln the cost of production of Portland cement had been so far reduced as to render possible the application of the material to uses in which lime had previously held the field; so that at the present time a limit could hardly be set to its sphere of usefulness. While theoretically concrete should weigh about 162lb. per cu. ft., the figure found in practice rarely exceeded 140lb., or in other words about 14 per cent. consisted of voids. This consideration at once suggested the possibility of increased economy in construction by using every endeavour to make concrete denser and consequently more efficient. Not only might a saving of material be effected thereby, but a further advantage was gained from the fact that the denser product would be less pervious, and better able to resist the action of water.

For structures of concrete exposed to the action of water, the liberal use of cement was an obvious means of securing imperviousness; but the employment of some substance, e.g., of the pozzuolanic class, which would combine with the hydrated lime set free in the process of setting of cement, was perhaps not so common. In the selection of a suitable aggregate not only must its texture be taken into consideration, but also the possibility of any chemical action that it might exert in the concrete; thus débris containing sulphates or easily decomposable silicates was unsuitable. So much had been said of the danger of magnesia in cement that the amount allowed had been reduced to quite a low figure. Undoubtedly there had been considerable confusion over this point; the presence of magnesium compounds in structures that had failed under sea water conditions was really due not to the presence of magnesium compounds in the original cement, but to the formation of magnesium hydroxide by the reaction of the magnesium salts in sea water with the lime compounds of the cement.

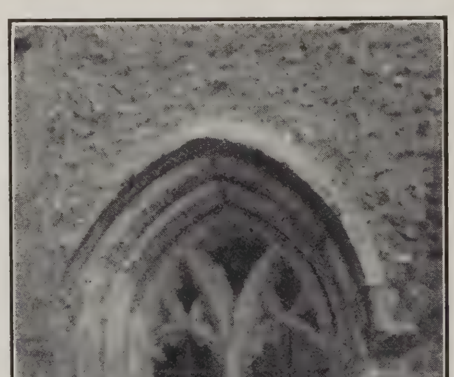
SEWAGE PURIFICATION.

In a paper on Sewage Purification, read before the Manchester Section of the Society of Chemical Industry by Dr. Grossmann, of Manchester, the author said that if all the valuable manurial constituents contained in sewage could be utilized on land, they would represent a value of somewhere about £40,000,000 per annum. When the present system of sewage disposal by water carriage was adopted, it was pointed out that it was a most wasteful system on economic grounds, but it was recognised that its advantages from a hygienic point of view outweigh commercial considerations.

The sewage, which was conducted by underground sewers to the sewage works to undergo further purification, consisted of a liquid and a solid part, which were separated at the sewage works, and so far as the liquid part (which ultimately found its way into the rivers and the sea) was concerned, the present mode of purification, if properly carried out, would fulfil all anticipations with regard to public health. But as regards the solid part, the present mode of disposal was still a danger to the community. If that part which was generally termed "sludge" was carried out to sea, there was a danger of infection to oysters and other shellfish, and there was, further, a chance of the material being washed back to the coasts. If dumped on the ground, it created a nuisance, and if used on land for farming purposes, there was the danger of infectious diseases being communicated to cattle and human beings from grass and crops grown on such land.

Experiments carried out by agriculturists at the instigation of the Royal Commission on the treatment of sewage and sewage sludge had conclusively proved that the value of sewage sludge, calculated on the dry substance contained in it, was not more than 10s. a ton at the outside, and as the sludge was produced at the sewage works in a state containing a large amount of water, it could not pay the farmers to use it unless the farms were in such close proximity to the sewage works that the cost of carriage and ca age was inconsiderable. Attempts h been made to reduce the cost of carria by drying the sludge, but even after d ing in the ordinary way, it could not considered to be effectively sterilised, a was, therefore, still liable to carry inf tion. Moreover, it had been proved the Royal Commission that it was wo even less after drying than before.

Dr. Grossmann gave calculations wh showed the futility of attempting to d pose of the sludge by gasifying it in p ducers, or of obtaining illuminating g from it. The conclusions he arrived were that until the disposal of sludge v effected by sound hygienic methods th was still danger to the community; t no process for the disposal of sewa sludge could be considered satisfact which did not enable the manurial c stituents contained in it to be retur to the soil in a thoroughly sterilised c dition, and that sludge could never beco a valuable manure unless it was p viously freed from the greasy matter a ing from soap suds and other fatty s stances which in the sewers became mi with it and which prevented its manu constituents from being assimilated by plants.



WINDOW, CLARE CHURCH SUFFOLK.

DETAILS, OLD & NEW.—XXXI

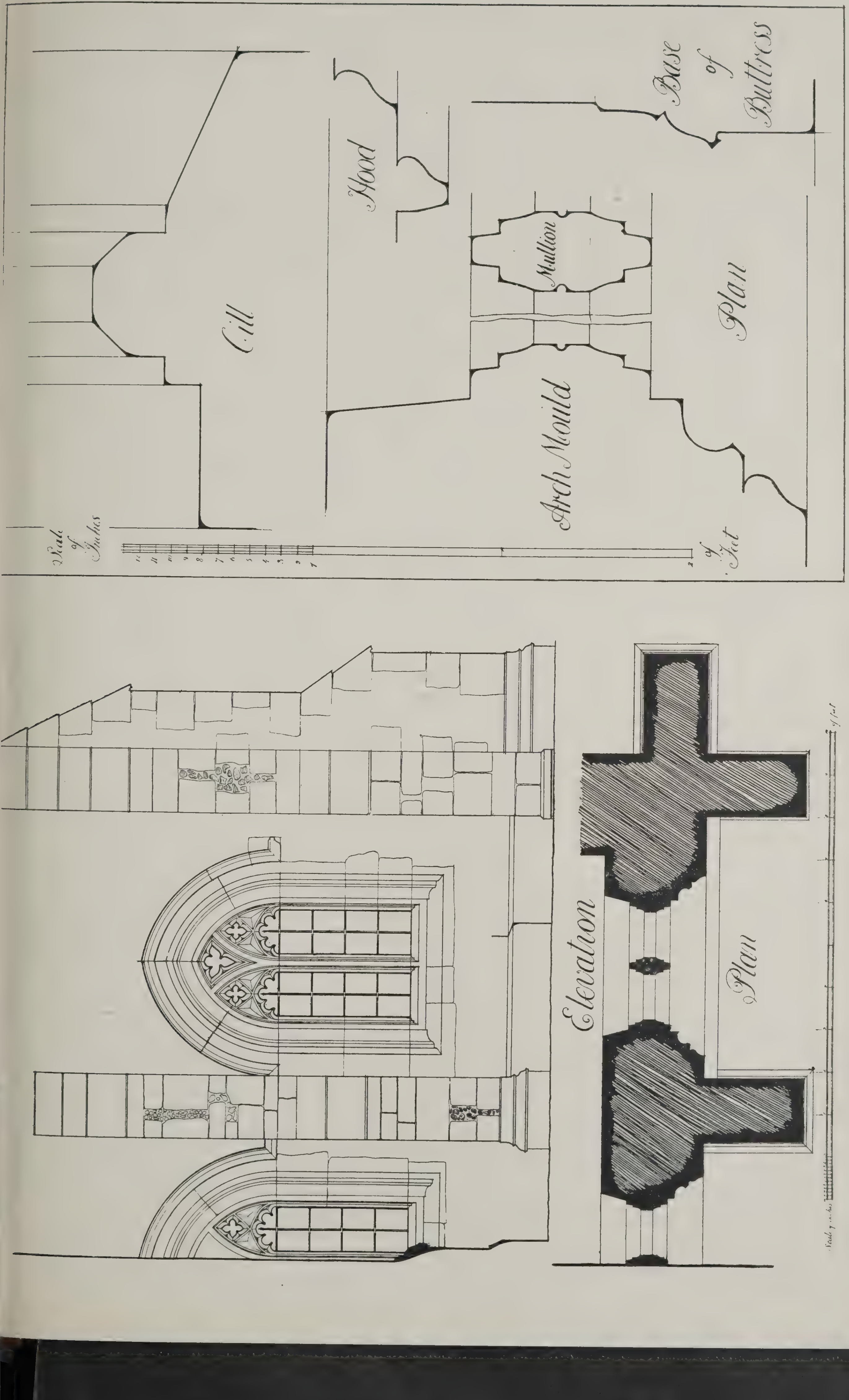
Windows from South Porch of Clare Church.

Clare Church is a good specimen Suffolk architecture. Long Melford Lavenham churches are richer and m perfect; but the former, with its old f walls, pointed and repaired with bri and tiles, touched with gold as it we has a beauty of its own. It is a l building, with battlemented coping to main and aisle roofs, with a rather sq tower and two bold crocketed pinna at the junction of choir and nave ro serving as abutment to the nave a The windows are rather uninteresting sp mens of Perpendicular work, with the ception of the one chosen for illustrati

A very curious feature is the porch the south side, which, besides contain the vestibule, has on the east side a sm chapel. It is from the other side of porch that our example is drawn. whole church is late in date, but fort ately it is not now condemned for not be Early English. It has a character of own, and is the visible expression o still noble tradition in building. It is the normal line of architectural devel ment.

There are several points of interest the interior: The nave piers have bat mented capitals, and a finely enric cornice under the clerestory, and the r is interesting. A splendid lectern w open-beaked archaic eagle, the gift Queen Elizabeth, still adorns the chur Some of the return choir stalls date fr about the same period. The altar rai a simple Georgian one, with sp balusters.

To return to the porch and its windo It is impossible to assign a reason for cutting in halves of the second window. some ways the mediæval builders mo in an extremely circumscribed orbit. P sibly this is one of the factors which w to increase its interest, for its gro becomes a continuous development. are rather inclined to overlook this the drastic subdivisions of the text-bo Perhaps, after all, art is like life, wh we step along like little children, sure nothing but the very ground we st



WINDOW IN THE SOUTH PORCH OF CLARE CHURCH, SUFFOLK. MEASURED AND DRAWN BY B. R. PENDEREL-BRODHURST.

upon. Certainly the old builders did not proceed *per saltum.*

The window and half a window from Clare are of fairly heavy proportions, a great contrast to the spider's web effect of those of the main church, and therefore are somewhat unusual for the early date. But they are effective, and the tracery is good—the heaviness of the members enhancing the small cuttings in the tracery.

J.M.W.H.

IN PARLIAMENT.

(*By our Press Gallery Representative.*)

Protection of Ancient Monuments.

A Bill has been presented in the House of Commons by Mr. Noel Buxton to extend the Ancient Monuments Protection Acts, 1882 to 1900. The Bill has the support of Mr. Chas. Roberts, Mr. Essex, Mr. Whitehouse, Lord Henry Cavendish-Bentinck, Mr. John Lyttelton, Sir Hildred Carlile, and Mr. J. Ramsay Macdonald. The full text of this short Bill is reproduced in another part of the present issue.

On the motion of Mr. Noel Buxton a return was ordered showing the systems adopted by the governments of the great European Powers for the preservation of ancient monuments.

Town Planning Act.

Mr. Silvester Horne asked the President of the Local Government Board what steps were being taken in the vast new colliery districts round Doncaster to apply the provisions of the Town Planning Act, and what pressure was being exercised by the Local Government Board upon the local authorities to insure that all the new colliery villages should be built in accordance with proper designs as contemplated by the Act in question. Mr. John Burns in reply said a conference was held last May of representatives of the local authorities in the Doncaster district, at which he understood it was decided to be advisable that plans should be prepared of areas suitable for town planning under the Act of 1909 with a view to the preparation of a comprehensive scheme. No definite decision had been come to by the Doncaster Rural District Council at the end of October last to prepare a town planning scheme for any area in their district. He had not lost sight of the matter or of its importance, but there were considerable difficulties arising in connection with the area in question which must not be underestimated.

King Edward Memorial.

Mr. Noel Buxton asked Mr. Dudley Ward, representing the First Commissioner of Works, whether, in view of the desire of the King Edward Memorial Committee to recommend to the Government a site in Green Park for the memorial, he was able to state the date on which the House would be given the opportunity of expressing its views in accordance with the statement of the Prime Minister. The reply to this and to a similar question by Captain Murray will be found on p. 625.

Ventilation of the House.

Mr. Crawshay-Williams asked the Prime Minister whether, in view of the recommendation of the Select Committee appointed in 1902 to inquire into the ventilation of the House of Commons that a further inquiry should be instituted into problems of ventilation still unsolved, he would appoint another Select Committee to conduct such an inquiry.

Mr. Asquith in reply said he was informed that the expenditure incurred in carrying out the recommendations of the Select Committee of 1902 ceased in June 1907. Until more precise methods had been demonstrated, from whatever source, for dealing with the outstanding problems of ventilation, the time seemed hardly ripe for pursuing these questions by the establishment of another Select Committee.

Sir Frederick Banbury, amid the cheers of members, suggested that they should revert to the old-fashioned way of opening the windows. It used to be, he added, an extremely comfortable and pleasant House to sit in. Mr. Pirie also remarked that that simple process would involve very little expenditure.

Annunciators in the Galleries.

A suggestion has been made to the First Commissioner of Works that annunciators should be erected in the galleries for the purpose of acquainting strangers with the identity of speakers. Several of these valuable contrivances are erected in the rooms of members, and the journalists have one in their new writing-room. The annunciator is a machine worked by electricity, by which the names of speakers are printed and displayed in large type on paper running on double coils. In the meantime the First Commissioner regrets that with the funds at his disposal he cannot afford the convenience.

OBITUARY.

Mr. Edmond Saglio.

M. Edmond Saglio, the distinguished French archæologist, has died at his residence in Paris in his 84th year. M. Saglio, who was a member of the Académie des Inscriptions et Belles Lettres, for many years followed an official career, first as director of the Gobelins factory, and later as Conservator of the Department for Medieval Sculpture at the Louvre. His last appointment, which he held until 1903, was the directorship of the Cluny Museum. The work with which his name will remain associated in the Dictionary of Greek and Roman Antiquities, which he began 40 years ago in collaboration with his friend Daremberg. His son M. André Saglio, who is likewise a member of the Institute, has acted as French Commissioner at various fine art exhibitions, and is well known as an authority on French furniture.

THE NATIONAL FEDERATION PRESIDENT ON BUILDING TRADE TOPICS.

The annual dinner of the Sunderland and District Building Trades Association was held at the Grand Hotel, Sunderland, on December 5th, Mr. R. J. Hudson, President, in the chair. Among those present were the Mayor of Sunderland (Councillor E. H. Brown); Mr. John W. White, President of the National Federation of Building Trades Employers of Great Britain and Ireland; Councillor J. T. Armstrong, President of the Tyne and Blyth District Federation; Mr. William Milburn, Vice-President of the Northern Architectural Association; Mr. Thomas Anderson and Mr. George A. Leck, Presidents respectively of the South and North Shields associations; and Mr. W. H. Hope, secretary.

After the loyal toast, Mr. Henry Bell submitted that of "The Mayor and Corporation of Sunderland," remarking incidentally that there was no doubt that trade generally was improving, so that builders might look forward to a fairly decent year.

Corporation Contracts.

The Mayor, in responding, said, with reference to corporation contracts, some members objected to the contractors doing any work at all, while others as strongly deprecated the undertaking of any work by the corporation. He would welcom the happy medium way—the work that th corporation could best do itself, that l it do; but it must still be borne in mind th the contractor was a ratepayer, and oug not to be deprived of his fair and legit mate opportunities.

Presentation to Mr. J. W. White.

Mr. Morice Wright, ex-President of th Sunderland Association, proposed "Th National Federation." This year, he r marked, Sunderland had the honour providing the National Federation with president. He coupled with the toast th name of Mr. John W. White, and, th toast having been accorded music honours, Mr. White was presented with silver salver and an illuminated addre from the members of the Sunderland Ass ciation and friends; Mr. Wright remar ing that Mr. White had been selected member of the National Industri Council.

The Work of the National Federation.

Mr. John W. White having express his high appreciation of the gifts, sai with regard to the work of the Federatio that the first object in forming was that of dealing as an organised bo with the organised workmen. By th adoption, some six years ago, of the Co ciliation Board scheme, strikes and loc outs had been almost entirely abolished a consummation that, he thought, no oth great industry in the kingdom had as y reached. If the Federation had do nothing else, it would still be entire worthy of the support of master builde throughout the country. But the Nation Federation had many other uses. F example, it had secured the assent the Royal Institute of British Archite to a form of contract which he believed be fair and reasonable, and which he w glad to know was coming into very gener use, to the advantage of architects as w as of builders.

Industrial Legislation.

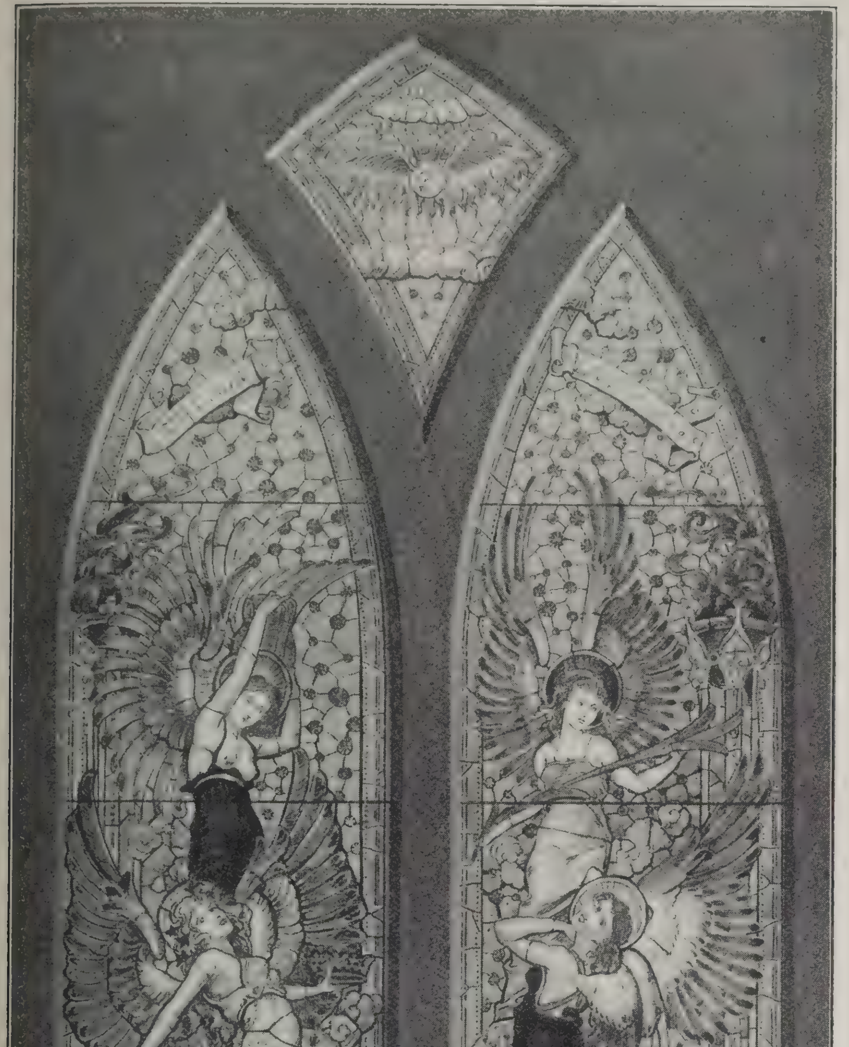
More recently, the Federation h addressed itself to what would probab become one of its most important fun tions—that of paying close attention to t trend of industrial legislation. When t Workmen's Compensation Act was intr duced, its promoters confidently assert that it would represent a liability of som thing like four or five per cent. This, ho ever, had materialised at something li forty per cent., and had become a ve oppressive burden upon the industry. J now the Federation was doing its best prevent, or at least to mitigate, furth legislation that would, if passed witho reasonable modification, impose furth heavy burdens on the building industry.

Land Duties.

Referring to the increment duties land, Mr. White said that as time went those duties would press very heavily small properties. It was a land duty onl and the increment on the land could n be set off by a corresponding value buildings, which, being subject to natur decay and dilapidation, deteriorated in t owner's hands. It was therefore possi for an owner to be compelled to sell t property for actually less than he paid f it; and yet, under the Act, he would st have to pay increment duty! The A pressed very heavily on the building trad because, obviously, it greatly discourag and depressed investment in hou property.

The Insurance Bill and the Cost of Labo

Turning to the Insurance Bill, M White said that it would have a dire



The motive for this design was prompted by the third verse of *Te Deum Laudamus*: "To Thee all Angels cry aloud: the Heavens and all the powers therein."

DESIGN FOR A STAINED-GLASS WINDOW. BY PERCY H. STEAD

(Royal Academy Exhibition, 1911.)

effect on building estimates. He had found, after working it out dispassionately on his own time-sheets, that it would increase the cost of labour by at least 1¾ per cent.

The Compensation Act.

It would now be futile to discuss the principles of the Bill; but he was bound to say that building employers felt that there was one omission from the Bill that ought not to have occurred. They thought that the Bill should have covered their liabilities under the Compensation Act. It was sometimes very difficult to determine whether a man's sickness was due to an accident or whether it was due to other causes. Under the Insurance Bill, the doctor, being paid so much per head, had an interest in seeing that the patient did not malinger; and the same system might be advantageously applied to the Compensation Act. Builders really believed that the enormous increase of the costs of accidents was largely artificial; and the great depletion of the funds of friendly societies and of trade unions since the Act came into operation was ample proof that the Act had greatly increased the time it took for a man to recover from an accident.

Premature Operation.

Another point about the Bill to which builders were entitled to make serious objection was that it would come into operation too soon. It would take toll from contracts that had been entered into during a period of depression, sometimes at unremunerative prices. To ask builders to pay upon these contracts was like asking them to pay the 1¾ per cent. extra on labour out of their own pockets, and not out of profits. Mr. White complained also that while, when framing the Bill, the Government had been careful to consult organised bodies like the friendly societies, organised employers were not accorded the same facilities; and the same thing had happened since the Bill had been brought in.

Health Councils.

There were two other provisions in the Bill to which he particularly wished to draw attention. The Commissioners would set up a standard of health for certain districts. When sickness was excessive by 10 per cent. for a period of three years, or when there was an epidemic in any one year, an employer, or any combination of employers, might be called on to pay to the Health Council the extra cost incurred. The Health Councils who would deal with this matter would consist of not less than twenty-four members—one-third representing the insured persons, one-third the local sanitary authority, and the other third the health authorities, the latter to consist of two women and two doctors. The point Mr. White wished to make was that, in dealing with claims for sickness, all the machinery would be in the hands of the Health Council. Under the Bill it was possible to charge the local authority with the cost of that excess sickness if it was proved to be their fault. On the other hand, if the employers and the property owners were held blameless, the money must come out of the funds of the approved societies. Hence the position of the employer would be prejudiced, because it would be in the interests of the authorities to demonstrate that the responsibility rested with him rather than with them. It was a blot on the Bill that the employer had no representation whatever on the Council.

Unemployment Insurance.

With regard to unemployment insurance, Mr. White thought that the unskilled labourer, rather than the skilled artisan, should have been selected for the experiment. Employers had pointed out to the Government that, owing to the decay of apprenticeship, unemployables were increasing, and that the Bill afforded an opportunity for the encouragement of apprenticeship. In the result, while the indentured apprentices would receive full benefits, the unindentured would receive only partial benefits. The employers had also succeeded in modifying the Bill in the matter of sympathetic strikes.

The Industrial Council.

Having dealt with other points in the Bill, such as the successful endeavour of the employers to reduce the limitless responsibility of the builder for "all men employed in the building trade," by narrowing it down to the men who were actually fixing on the job," Mr. White referred to the constitution and functions of the new Industrial Council, which he thought might possibly be competent to terminate industrial warfare, and might thus secure a national gain of immense importance.

Councillor J. T. Armstrong, proposing "The Northern Counties Federation and the Sunderland Building Trades Association, said that the success of both the Federation and the Association was largely due to the energy and ability of the secretary, Councillor W. H. Hope.

Mr. William B. Cooper and Mr. R. J. Hudson responded.

Mr. Robert J. Huntley proposed "The Architects, Surveyors, and Engineers," and Mr. William Milburn, Vice-President of the Northern Architectural Association, responded.

TRADE AND CRAFT.

Beautiful Marbles.

Messrs. Walton, Gooddy and Cripps, Ltd., quarry owners and workers in marble and granite, whose London branch is at Eagle Wharf, N., have issued a finely illustrated booklet showing many views of their premises in London, Liverpool, Bristol, and elsewhere in England, as well as of their quarries and workshops at Carrara and in other places in Italy; and there are, besides, several fine halftone engravings of buildings and other structures (including the National Memorial to Queen Victoria in St. James's Park) in which marble work has been executed by this firm in various parts of the world. A plate showing some exceedingly beautiful specimens of coloured marbles is included.

Armoured Tubular Flooring.

In the new business premises which are being built for Messrs. Denniss Paine and Co., at Maidstone, on the site of the building that was last year destroyed by fire, the Armoured Tubular system of flooring has been laid throughout, covering an area of nearly 2,000 sq. yds., the clear spans being of 21 ft. and under. The webs and tubes were made at the works of the Armoured Tubular Flooring Co., Ltd., in Maidstone, and the work was executed by Messrs. G. E. Wallis and Sons, the contractors for the building, who are the Kent district licensees for this system, on which also the floors of the new Kent County Council Offices, to the extent of 5,000 sq. yds., are being constructed and laid by the same contractors, under the direction of the county architect. The architects for Messrs. Denniss Paine and Co.'s new premises are Messrs. Ruck and Smith, F.R.I.B.A.

Western Flooring, Terrazzo, and Tiling.

We have received for examination a specimen of the tiles used by the Western Flooring Co., Ltd., in various applications. The material is fire-resisting, waterproof, sanitary, and silent. It will adhere to and can be laid on any solid foundation. It can be laid jointless, or in the form of tiles of any desired area or thickness, and is made in various colours. It can be highly polished for walls, which then require no papering, or can be left non-slippery for floors; and, either for walling or for flooring, may be used with advantage in theatres, barracks, laundries, hospitals, factories, railway stations, or steamships. Western tiling can be laid on any foundation, such as wood, iron, and concrete, and, being fixed with a special composition, will not wear loose. "Western terrazzo" is an improved terrazzo mosaic paving, made of special granite chippings, in various colours, can be polished to a fine surface, will not wear slippery, and can be had in various designs and patterns. The London address of the firm is 32 and 34, Theobalds Road, London, W.C.

FEDERATION NEWS.

The Yorkshire Federation.

The monthly meeting of the Executive Council of Yorkshire Federation was held at the King's Head Hotel, Barnsley, on November 16th, when Mr. A. J. Forsdike, President, occupied the chair, and 35 delegates were present from the affiliated associations.

National Insurance Bill.—It is stated that the Board of Trade has requested and been granted permission to print the observations of the Federation on the Unemployment Section, especially on Clause 63, for circulation among the members of the Grand Committee considering this section. It was reported that the Government had made very valuable concessions on some of the clauses which would be to the mutual advantage of employers and employees.

Owner's Right of Indemnity Against Objectionable Tenants.—It was resolved, having regard to the uncleanly habits of many tenants of property involving landlords in contingent liability to local authorities, on possible allegation as to insanitary conditions, to make an urgent request to the Government, in view of the further serious burden imposed by Clause 46 of the National Insurance Bill, to make it an essential and implied condition on tenants of property to keep the same in a cleanly and sanitary manner, with power of recovery of such expenses and penalties as are paid by or recovered against owners arising out of such improper and uncleanly tenancy; and also to facilitate the procedure of ejectment in order to permit of earlier removal of objectionable tenants.

Employment of Non-Union Workmen.—Mr. Dews, on behalf of the Leeds Association, stated that a meeting of the Leeds Conciliation Board had been called, under Rule 1 of the Conciliation Rules, to consider the action of the Operative Societies in Leeds who were parties to the conciliation agreement in respect of non-unionists. The local board was unable to arrive at a decision, and the association had given notice to the operative societies that it was their intention to appeal to the Northern Centre Conciliation Board. The operative societies for the first time then raised objection to the matter being considered, on the ground that the workmen claim to have the right to work for whom they will, and to cease work at any time, subject to notice, if working under uncongenial conditions or with objectionable companions. The employers contended that they had no right to endeavour to enforce any collective requests or demands upon federated employers other than those included in the working rules; and if these are observed, employers were entitled peacefully to pursue their business and be free from molestation by trades union officials. It was pointed out to the operatives that there was therefore a distinct difference of opinion as to the meaning and intention of the working rules; and in order that this might be cleared up, it was extremely desirable that the whole matter should be considered by the Northern Centre Conciliation Board. The matter has received attention by that Board, and as no decision was arrived at, is being carried to the National Conciliation Board.

Facilitation of Appeals.—A letter was read from the secretary of the National Federation suggesting that quarterly meetings of the National, Centre, and Local Boards should be fixed, when meetings should be called if necessary; and the dates of the respective meetings so arranged that the hearing of appeals be expedited. This would remove growing opposition to the Conciliation Boards on the part of the operatives, and would also place them upon sound and equitable lines. The Yorks Federation cordially supported the proposal, suggested that the National Board should three times per year on dates mutually fixed at annual meeting of the Board; the Centre Bo also to meet at suitable and regular intervals.

Conciliation Rules—Proposed Amendments.— question of amending the conciliation rules carefully considered, and it was resolved to notice of amendments as follows:—

Rule I.—That the word "and" be *deleted* in 3, and the following words be *added* after word "work" in line 4, "and any other questio trade interest which might lead to stoppage work." Rule 4.—That the word "both" in lin be deleted, and the words "one of" be substitu Rule 13.—That the words "such cross votes" be leted in line 107, and the following words sub tuted, "more than one cross vote."

H.M. Office of Works.—A letter was read f H.M. Office of Works dated 18th October, 1911 respect of the various observations made by Yorkshire Federation in connection with post contracts. The president reported that the Spe Committee having the matter in hand had considered the letter and approved of the re which was read to the Federation. A motion passed asknowledging the courteous considera which has been extended to their observation H.M. Office of Works and cordially approvin the action of the sub-committee in replying to letter.

Conciliation Boards—Admission of Buil Labourers.—The notice of the Midland Centre alteration of Rule 19, so as to permit of buil labourers being parties to the Conciliation ag ment was considered, and by motion the Federa expressed the opinion that it is very desirable all sections of the building trade should be bro under the Conciliation scheme; but that builders' labourers, where sufficiently organi should first be required as an essential conditio admission to sign any existing rules which been mutually agreed upon for the particular trict; and also undertake that all and every pute shall be referred to the Conciliation Bo and not to any other party, unless and until procedure required by the Conciliation Board been fully and strictly complied with.

Workmen's Compensation.—The attention of Federation was drawn to the application of trade unionists to the Government to recei deputation with respect to the appointment Commission of Inquiry into the working of Workmen's Compensation Act. Recent figures shown that for every £100 of compensation act paid to the workmen, the employers have ha pay £150. It was resolved to support the Nat Administrative Committee, if application was to the Government for the appointment of a mittee to inquire into the working of the men's Compensation Act, especially with a of consolidating Acts relating to workmen bringing them all into line with the National surance Bill; and, in pursuance of the princ adopted by the Government in respect of the surance Bill, to make workmen contribute to expense, and relieve employers from further bility on payment of a weekly contribution in spect of each workman employed.

National Federation Finance.—The recomme tions of the National Administrative Comm with respect to National Federation Finance carefully considered. On the motion of M Lindley, seconded by Mr. J. Biggin, it wa solved, in view of the importance of the m and especially the vital way in which it will the three Federations constituting the Nort Centre, to request the president of the Nort Centre to consider the expedincy of conveni meeting at the earliest possible date, in order the recommendation of the National Admini tive Committee may be taken into most careful sideration.

Officers for 1911-12.—The recommendations o Emergency Committee with respect to officer ensuing year were considered, and the follo nominations approved for submission at the a meeting:—President, Mr. J. Townsley, senior vice-pres., Coun. W. Mallinson, Hud field; junior vice-president, Mr. W. T. Led Leeds; treasurer, Mr. T. E. Taylor, Bradford ministrative committee, President, Hull.

Leeds Association and Notices From Joiners Labourers.—Mr. Dews, on behalf of the Association, reported that notices had been rec from the joiners for increase of wages fro per hour to 10d., and other alterations of wo rules; and from the builders' labourers for inc of wages from 6½d. per hour to 7½d.

The association were empowered to conduct tiations with the operatives' societies, and in the Federation if at any time its advice is so or its intervention desired.

Sheffield—Joiners' Wages and Rules.—Mr. dike stated that the application of the joiner increase of wages and alterations of rules had considered by the joiners' trade committee the Sheffield Conciliation Board without any and the same would therefore be referred t Northern Centre Conciliation Board. (Since meeting an advance of ½d., to 9½d., has be warded.)

Annual Meeting.—Mr. Dews, on behalf of Leeds Association, invited the Federation to the annual meeting in Leeds, and on the moti Mr. W. Longden it was decided to accept th vitation, and the meeting was provisionally for Thursday, December 14th.—J Davidson,

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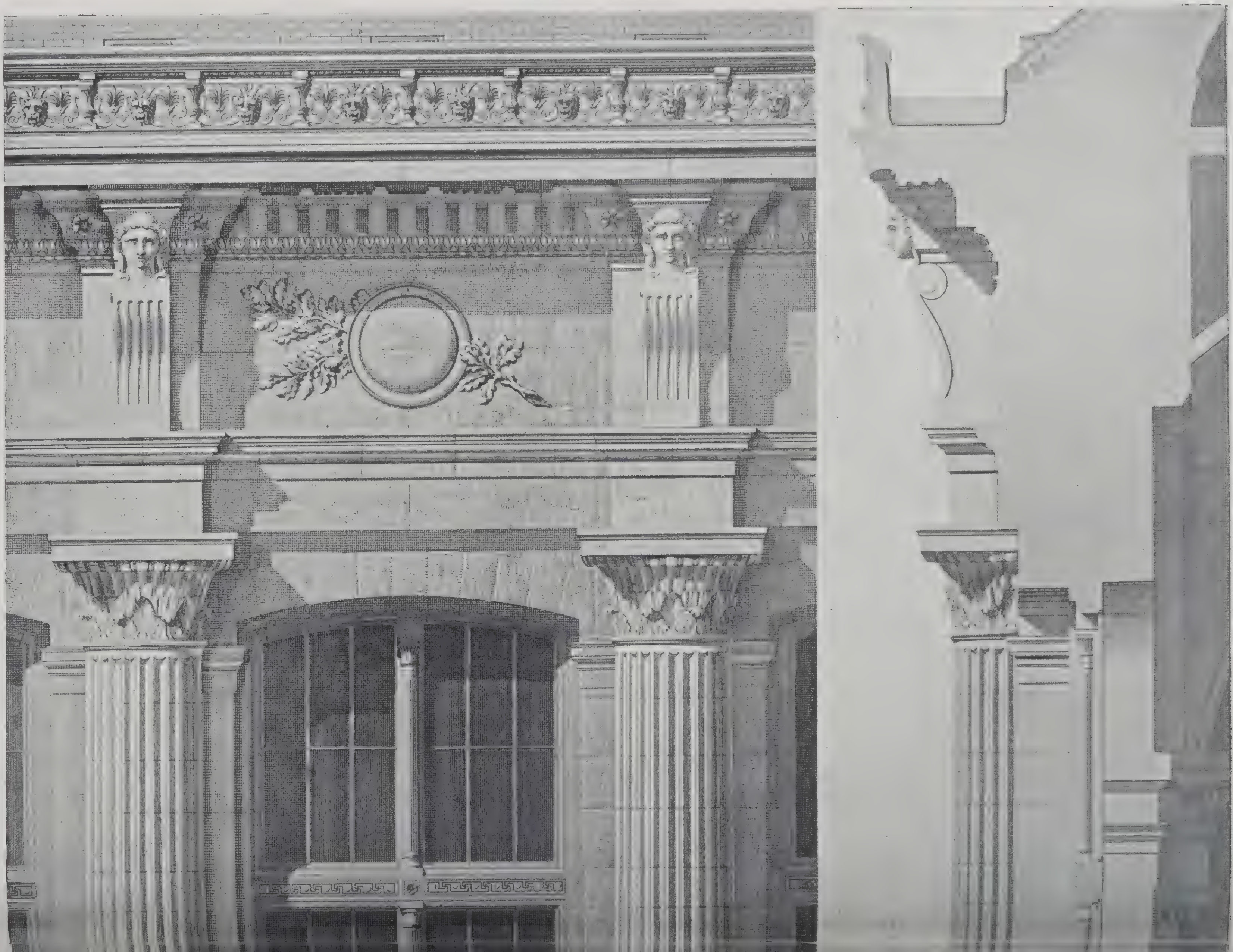
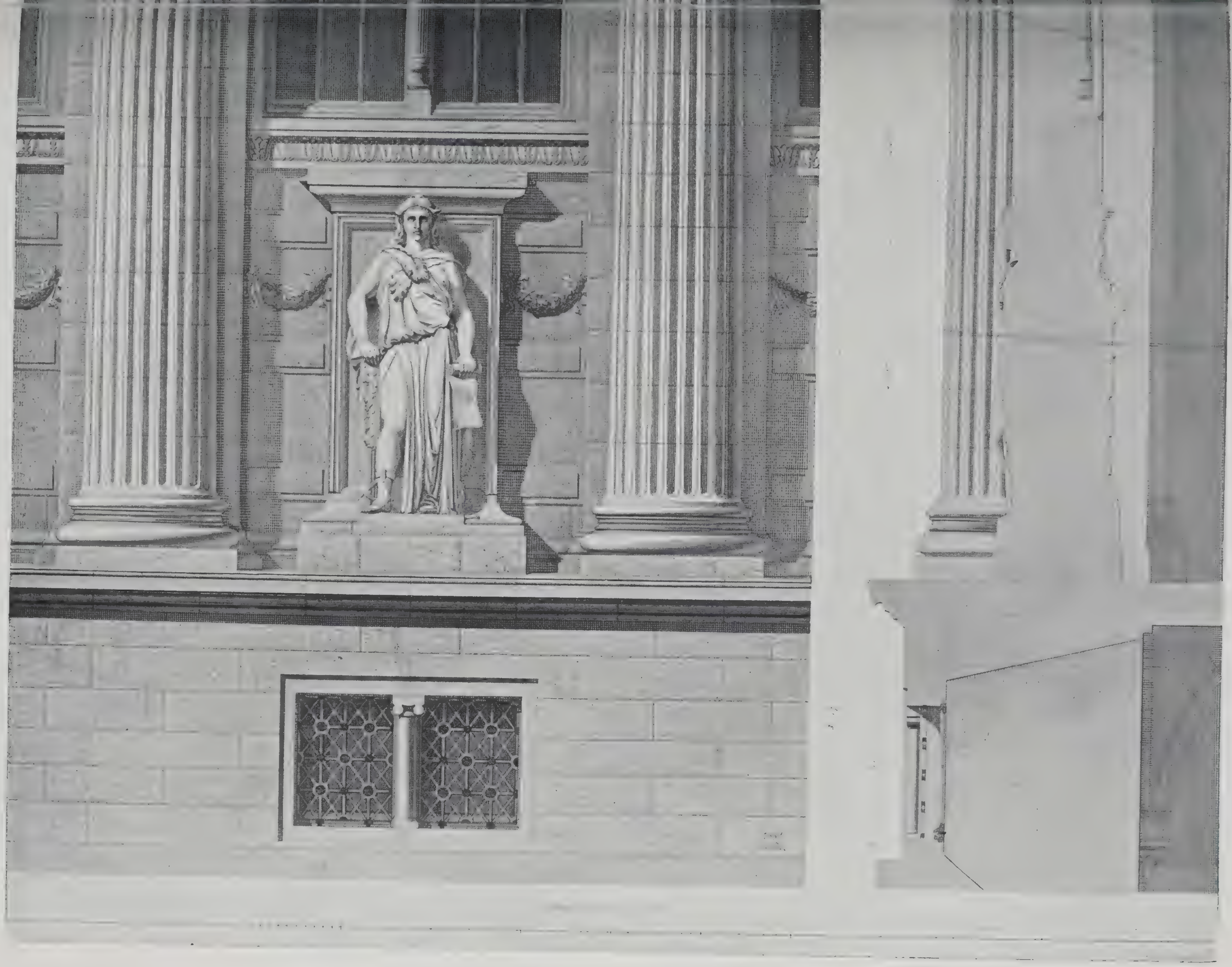
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, December 20th*, 1911.





THE PALAIS DE JUSTICE, PARIS: DETAIL OF FAÇADE. DUC, ARCHITECT.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

WEDNESDAY, DECEMBER 20th, 1911.

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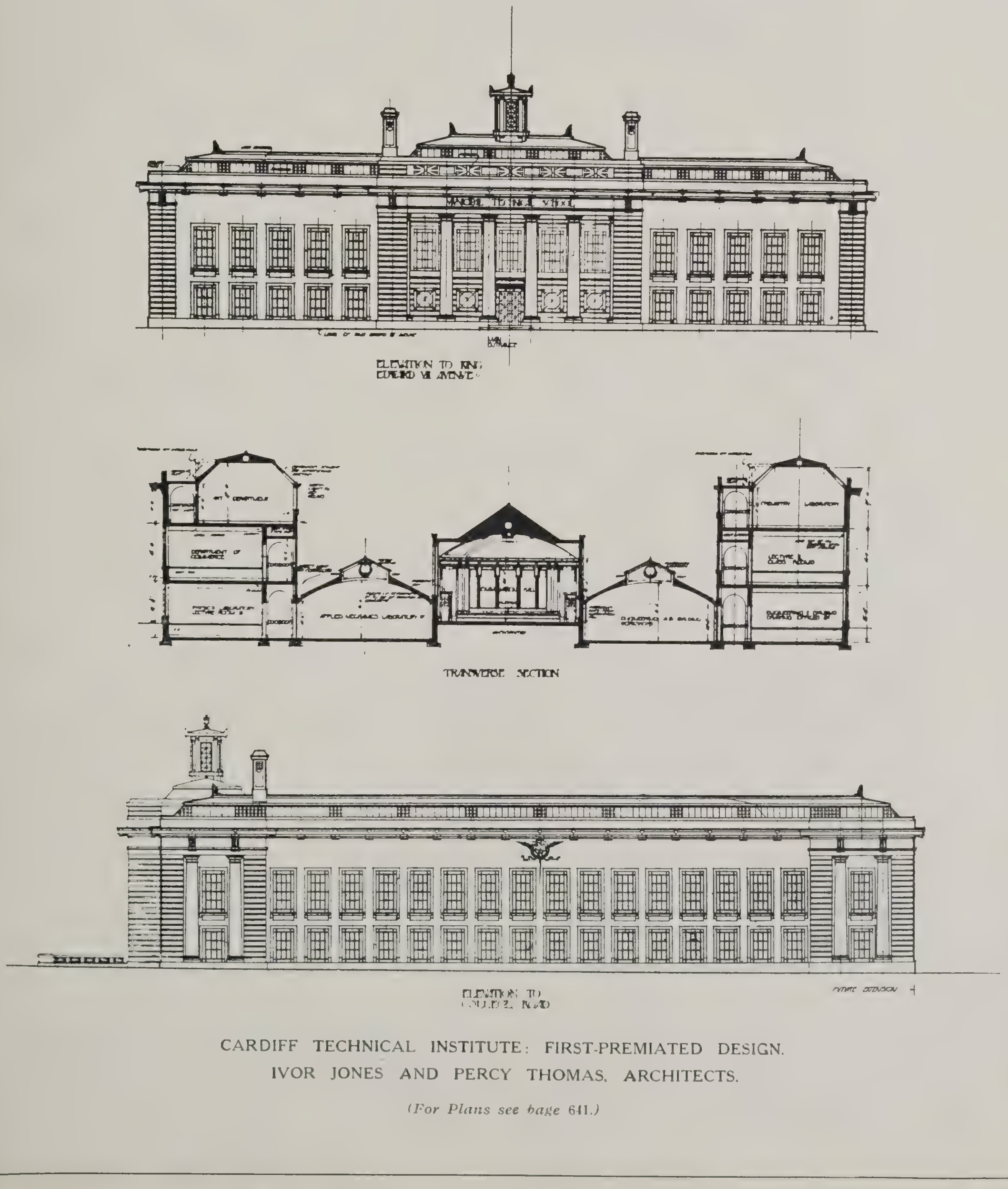
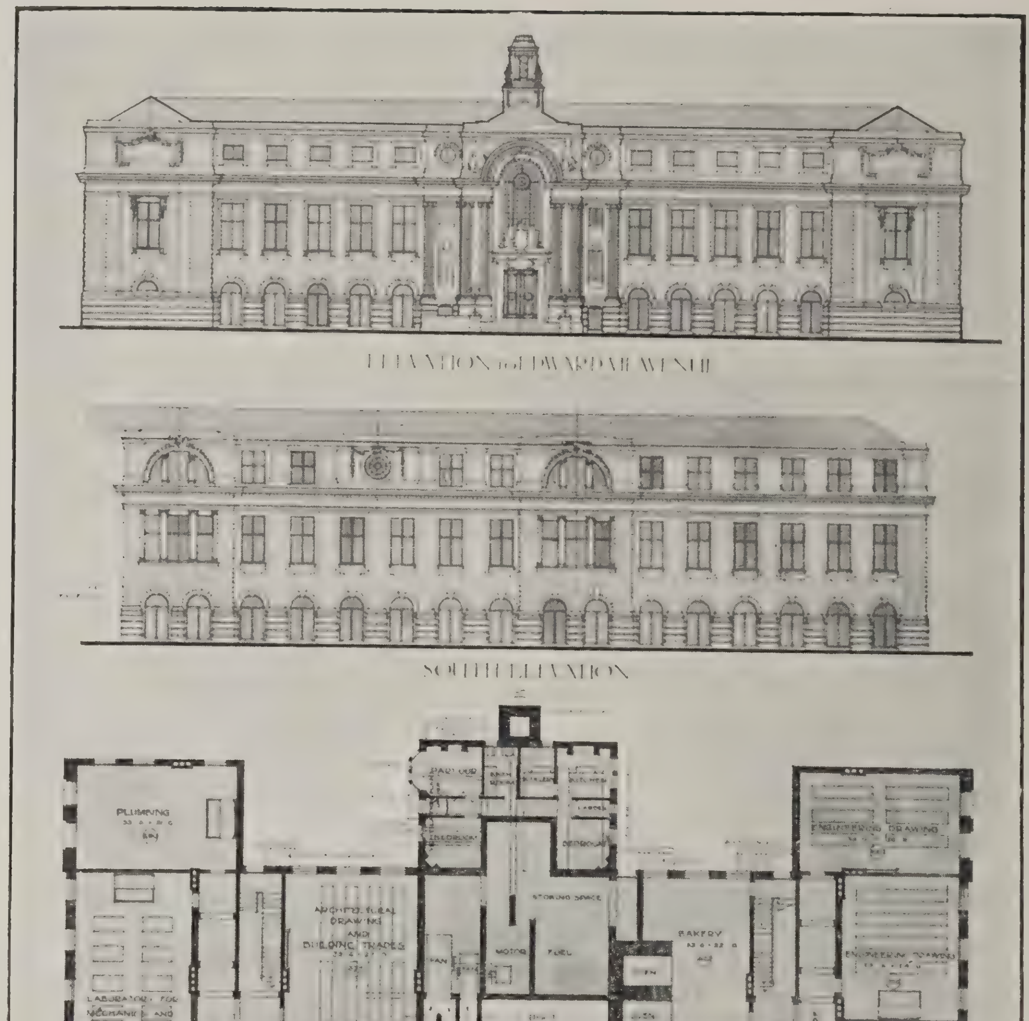

ELEVATION TO KING EDWARD VII AVENUE
TRANSVERSE SECTION
ELEVATION TO COLLEGE ROAD

CARDIFF TECHNICAL INSTITUTE: FIRST-PREMIATED DESIGN.
IVOR JONES AND PERCY THOMAS, ARCHITECTS.

(For Plans see page 641.)



CARDIFF TECHNICAL INSTITUTE: SECOND-PREMIATED DESIGN.
COOPER AND SLATER, ARCHITECTS.

(For Upper Ground-Floor Plan see page 643.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 20th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 882.

NOTE : The List of Contents will be found on page IV. of the front advertisements.

The Royal Academy Students' Designs.

THE annual exhibition of the designs sent in for the various prizes offered by the Royal Academy to their students, which took place on Monday and Tuesday last week, came too late to allow of our noticing them in our last issue; but we do not wish the occasion to pass without putting on cord our impressions.

Architecture is in general the least brilliant portion of the ow, and the Gold Medal and £200 Travelling Studentship, e greatest prize which an architectural student can obtain England, is won more easily than the less valuable prize, a pecuniary sense, of the Soane Medallion and Scholarship the Institute. It is won this year by Mr. Allan Binning, e subject being "The Hall of a City Company." The te plan we presume was given, as all the competitors adopt e same general outline of plan. Mr. Binning's design was a well-considered style of simple classic architecture, the tails refined and in good taste; the plan was a good one, cept that the main staircase was not treated in a very stately effective manner. Among the other competing designs, o. 137, with an octagonal entrance hall and the stair eated with more dignity, had merit; so had No. 138 in its ther French-looking elevation, but the plan was not good. o. 140 showed considerable originality in the treatment of elevation in rather a free style, and without any columnar der.

The Silver Medal and £20 for "an architectural design" as awarded to Mr. J. M. Whitelaw for a design for "A ncert Hall on an Open Site." The general arrangement the site was very fine, and looked as if the author had had me experience in the Ecole des Beaux-Arts; the plan of e concert-hall, as usual in such cases, showed inadequate asp of the practical requirements of a concert-hall, the an and section being a bad one acoustically, the orchestra o small and wrongly planned, and the organ thrust into a all recess which placed it practically out of the hall. If izes are offered for a design for a concert-hall, some attenn should be paid to practical requirements, and not merely the working of an architecturally effective room. One or o other competitors who chose the same subject made just e same mistakes. A design for "A Country House treated a formal way" (No. 151) showed considerable merit in anning. The minor prizes of £15 and £10 for "An chitectural Design" were won respectively by Mr. Owen es, for a design for a public place backed by buildings, d by Mr. Cyril Barry for "A Winter Garden," a good nple design in rusticated classic work. No. 167 showed a od design for "The pedestal of an equestrian statue." me of the plans for "A Town House" were rather using; in No. 166 the dining-room formed the only ssage to the back portion of the house; and in No. 159 the thor seemed never to have considered as to how the dinner, en cooked, was to get from the kitchen to the dining-room.

The prize for "A Set of Architectural Drawings" was given for measured drawings of the east end of St. Martin-in-the-Fields, in which the Bronze Medal winner, Mr. Bryetr, showed the best and most cleanly drawn elevation, but the Silver Medal winner, Mr. Clark, deserved his position for his careful drawing of details, especially a fine drawing of one of the capitals. The Silveer Medal for perspective drawing (Westminster School being the subject) was won by Mr. J. G. Cooper for a very correct though weakly executed drawing. For the prize in perspective drawing, open only to painters and sculptors there was (as usual) no competition, which is to be regretted, considering the sad work that painters often make of the perspective of buildings.

As usual, the sculpture showed the highest quality of work in the exhibition. The prize design for the Gold Medal was won by Mr. Angel, the subject being the one word "Rescued," which might be interpreted as the artist pleased; Mr. Angel took it as the rescue of a child by its parents from the attack of a serpent; a group admirably composed. All the designs had merit in grouping and composition, and all of them represented a distinct idea which was not commonplace. The competition for a miniature group limited to two figures had for its subject "An Act of Mercy" (a subject borrowed from Flaxman), and here again the prize design, by Mr. G. Ledward, was admirable in its sculpturesque simplicity, and all the others had merit, more or less. It is sad that with so much talent in sculpture among us, there is so little encouragement of the art in this country.

The painting of an important figure subject in oils must be the most difficult branch of art, for it is in that we always seem to find failure. The Gold Medal for what used to be called "historical painting" (a phrase somewhat out of date now) was won by a lady, Miss Margaret L. Williams, who produced the only picture in the set that was not absurd. The subject was "The City of Refuge." The Armitage prize for a monochrome sketch of a figure composition (Samson pulling down the columns) was not awarded, and no wonder, when one saw the compositions. Not one of the competitors seemed to have attempted to place or design the principal figure so as to make the exercise of force enough to break up two stone columns seem in the least degree probable, even for a Samson; and the compositions were mostly confused to the last degree. We doubt if the second prize ought to have been awarded either. The competition for a decorative painting (subject, "Winter") is generally one of the best, but is less good than usual this year. Miss Williams's work, to which the prize has been awarded, was undoubtedly the best in colour and composition, though its *motif* was a little obscure.

The awards of the landscape prizes generally puzzle us rather. The Turner Gold Medal prize picture, by Miss Kennedy, is the most finished and balanced painting submitted, but we doubt if Turner would not have preferred No. 10. For the Creswick prize the subject was "Lock on a river or canal," and Mr. J. Joshua, who wins the prize, depicted a lock on a canal in the midst of a grimy manufacturing town, which is hardly to be called landscape. It is a fine painting, and was perhaps the best, though No. 15, which represented the canal gates opening on the waterway of a small picturesque country town, made a much more pleasing picture. It certainly strikes one as odd, however, that the Academy should have awarded the Turner prize to the picture least like Turner, and the Creswick prize to the one which was the farthest removed from anything that one can associate with the name of Creswick.

The President's address to the students, at the delivery of the prizes, was full of words of wisdom, as to the importance of real study and the folly of dubbing as "academic" all work showing evidence of serious study. There is, as he truly said, an epidemic of slovenly work abroad, fostered by ill-considered criticism. But we fear there is little chance of Sir E. Poynter's warnings being attended to, so long as there are newspaper critics (so-called) ready to write up and to praise any collection of crude smudges, such as twenty years ago people would not have ventured to exhibit at all.

The Concrete Institute.

AT the ordinary general meeting of the Concrete Institute on Thursday last, Mr. G. C. Workman read a paper, illustrated by a number of interesting lantern slides, on "Some recent works in Reinforced Concrete." It is not of course possible to go on always bringing forward new information on one subject, and the lecturer's preliminary remarks were mainly a recapitulation of what is now generally known as to the principal methods of using steel in connection with concrete. He remarked that engineers tended more and more to specialise in concrete-steel, each one preferring one special method and working in it to the exclusion of other systems; and it is probable that in this manner the best work is likely to be done, as the attention of an engineer is concentrated on one system and he learns to know thoroughly its advantages and weaknesses, to improve on the former and correct the latter. Mr. Workman's own attention, he said, had been given for the last ten years to the Coignet system.

Some interesting points for comment were brought out in connection with the various structures illustrated and described in the course of the lecture. The first-mentioned was a tobacco warehouse for the Bristol Docks, the exterior appearance of which is identical with a previously erected warehouse with brick and stone walls; this second one is merely faced with the same materials externally, but is internally reinforced concrete instead of being in steelwork with concrete floors; by this means the storage space in the new building is considerably larger than in the old one, owing to the walls being only 14 inches in thickness throughout the height of the building, instead of the considerable thickness of brick walls required in the first building. Among the precautions against fire taken in the new building is that of slightly raising the floor level at all lift openings and doors, so that any floor can be flooded with two inches of water if required. The foundation of this warehouse is on ground piled with reinforced concrete piles, and in connection with both this and another structure subsequently mentioned, there is some interesting evidence as to the behaviour of this material when used for piling. Contrary to what one might have expected, it is proved by experience that reinforced concrete piles will stand the shock of heavy driving quite as well as timber; a photograph was shown of a pile which, under the operation of a steam monkey weighing 2 tons, was in three-quarters of an hour driven to its final set at a depth of 45 feet. It seems extraordinary that concrete, even when reinforced, should be able to stand such tremendous blows without being at all shaken or disintegrated; but another fact mentioned later on throws some light on this. The west pier at Newhaven has been under-pinned by means of about 700 reinforced concrete piles, replacing decayed wooden ones. The new piles were 16in. by 16in. in section, some of them measure over 50 ft. in length, and were driven a considerable distance into the hard chalk; but the point which struck us was this, that when one of these piles, 52 ft. in length, was being lifted at one end by a crane, the other end resting o truck, it showed a deflection of about half an inch in the cent the lecturer used the expression "only half an inch"; but fact, and the report of the deflection of an inch in anot large pile in a similar position at the Bristol Tobacco Wa house, seems to be really the explanation of the fact t reinforced concrete piles will stand this heavy driving; t have evidently more elasticity and less brittle character th might have been supposed.

Some interesting statistics given as to other structures wo hardly be intelligible apart from the drawings. In the cou of the lecture Mr. Workman suggested that in testing la beams it was well to have under the beam a few str emergency props about half an inch clear of the soffit of beam; this had the effect of re-assuring the men engage the loading operation, and also of preventing any sudden lapse which might be due to unforeseen circumstances.

The subject of the architectural treatment of the exterio reinforced concrete buildings, though not specially entere by the lecturer, who was naturally regarding the subject f a purely engineering point of view, cropped up once or tw as one might say, automatically, in the course of the lect In the illustrations of a warehouse in Yorkshire was show bridge of 50 ft. span connecting the old and new buildi with the appearance of a flat arch; but it was specially m tioned that this was a purely beam construction. Then represent it in the form of a sham arch?

The lecturer hoped that the revisal shortly of the Lon County Council by-laws would encourage architects to st the question of reinforced concrete applied to the f elevation of buildings. It certainly needs studying if it i be extensively used at all. Messrs. Nicholson and Corle buildings for the Jamaica Government at Kingston illustr a better way, the obtaining of effect simply by the opposi of masses and the play of light and shadow; the new Ki House, with its large and deep buttresses, has quite a turesque effect. In Jamaica of course reinforced concrete proposed in order to guard against danger from earthqua for which it is probably the best method of construction. apart from such practical reasons, reinforced concrete never come into use as an exterior architecture for the hig class of buildings. There are better and worse ways of tr ing it, but it is, in an architectural sense, too intractab material for the best artistic expression.

In the course of his lecture, Mr. Workman observed architects and engineers are inclined to specify for conc floors superloads, in other words, weight-carrying power square foot, much higher than is really necessary; and h no doubt right in his belief that this is done in order to s guard themselves against any chance of failure in the use material new to them. He instanced the case of the Holloway Money Order department offices, built under direction of the Office of Works (that is to say, of Sir Tanner), where the use of reinforced concrete is thorou understood, and where a superload of only ¾ cwt. per squ foot was required, which was quite ample, and at the s time economical.

It is to be regretted that so few architects appear to att the meetings of the Concrete Institute, where the papers r are usually accompanied by a large number of illustrati from which there is a great deal to be learned.

Pre-Raphaelite Pictures at the Tate Gallery.

THE loan exhibition of pictures of the pre-Raphae school at the Tate Gallery should not be missed. S very remarkable works, not often seen in London, collected there; among others Millais' "Blind Girl" with wonderful landscape detail, and his splendid study of col

Mariana. Holman Hunt's "Christ in the Temple" and adox Brown's pathetic "Farewell to England" are among her works to be seen there; Holman Hunt's admirable akspeare picture from the "Two Gentlemen of Verona," and veral of Arthur Hughes's beautiful and delicate conceptions. ere are a good many sketches and studies by Rossetti and hers. The collection is altogether of great interest to all vers of painting.

The Late M. Honoré Daumet.

M. HONORÉ DAUMET, member of the French Institute and an eminent architect, has died at the age of 85. Born in Paris on October 3rd, 1826, he became a pupil Blouet and Gilbert, studied his art in Rome and Greece, d was awarded the Grand Prix de Rome in 1855. In 1879 was appointed architect of the Palais de Justice, Paris, ich he carried out in collaboration with Duc. He was also gaged between 1876 and 1881 in the restoration of the mous castle at Chantilly, the residence of the Due d'Aumale, ich was illustrated in our issue of June 24th, 1908. Among . Daumet's other works were the Palais de Facultés and the lais de Justice at Grenoble, the Chapel of "Ecce Homo" in rusalem, and the Chapel and Pension for the Dames de on, Paris and Tunis. He also carried out the restoration at . Germain-en-Laye. Devoted to his profession, of which was regarded as one of the leading members in France, . Daumet held from time to time many positions of honour. e was President of the Committee of the International Con-ess of Architects, a member of the Académie des Beaux-Arts, spector-General of Civil Buildings in Paris, Vice-President the Council of Architecture of the City of Paris, and official chitect to the Court of Appeal, Paris. He was also a past-esident of the Société Centrale des Architects Français. He s a Commander of the Legion of Honour. M. Daumet ited London in 1906 to attend the International Congress of chitects. He was awarded the Royal Gold Medal of the yal Institute of British Architects in 1908. At that time fewer than nine of his pupils had taken the Grand Prix de me, among them being M. Ch. Girault, the architect of the tit Palais, Paris. M. Daumet retained his interest in the rk of his profession until the last, and so recently as October the present year presided at a meeting of the International mmittee in Rome. By the architects of France he was d in the highest esteem both for the nobility of his personal racter and for the refinement of his work.

Mr. Walter Crane, Hon. A.R.I.B.A.

WE note with peculiar pleasure that, on the nomination of Mr. Paul Waterhouse, Mr. Henry T. Hare, and Mr. Halsey Ricardo, Mr. Walter Crane, R.W.S., has been cted an Hon. A.R.I.B.A. Why Mr. Crane did not receive s honour years ago is a thing that passeth understanding; his extraordinarily busy life as "painter, decorator, igner, book-illustrator, writer, lecturer, socialist"—the cription is from "Who's Who"—has brought him often o direct contact with architects; and among his principal orations the following are recorded: Modelled ceiling and place, Coombe Bank, Sevenoaks; dining-room, 1, Holland rk; friezes, Clare Lawn and East Sheen; frieze, Paddock-st, Sussex; painted frieze, Vinland, Newport, R.I., S.A.; Passing a Torch, 1909, West London Ethical iety's Chapel, Queen's Road, W.; panels, Women's Chris-n Temperance Building, Chicago; frieze for the galleries British Art Section, St. Louis Exhibition; mosaics, Sir F. ghton's Arab Hall, South Audley Street. His publica-ns on art subjects include "Claims of Decorative Art" 92), "Decorative Illustration of Books" (1896), "The Bases Design" (1898), "Line and Form" (1900), "Ideals in " (1905), and "An Artist's Reminiscences" (1907).

"A Land of Garden Homes."

THE garden city and the garden suburb are not to be allowed to belie their names. If they are ever overtaken by the fate of, say, St. Martin's-in-the-Fields, where, it has been said, "never a green thing is to be seen, save the victim of the recruiting sergeant," that will not be the fault of the One and All Club, where the other night there was a large assembly to hear a lecture by Mr. Horace J. Wright on "Beautiful Gardens." It was explained by Mr. Edward Owen Greening, who presided, that a special interest attached to the lecture because it was part of a movement for promoting rural revival. An effort was being made, under Mr. Wright's control, to federate the numerous local horticultural societies throughout the Kingdom which organise annual flower shows. The idea was to develop their operations and convert them into practical teachers and missionary promoters of gardening. There were over 1,000 such societies, with probably a quarter of a million members. If the movement succeeds, the prospect of making Britain a land of garden homes was very hopeful. Mr. Wright showed by interesting lantern illustrations the remarkable results which can be achieved with skill and knowledge in London back-yard gardens. He gave detailed representations of plants grown, and added useful cultural hints. He advocated vegetable culture as of prime importance in the gardens of cottagers and working men. Fruit-growing claimed a second and important place, but where space permitted, the combined culture of vegetables, fruit, and flowers was the ideal at which to aim. That is good as far as it goes, and the architect will doubtless welcome the co-operation of the expert horticulturist in the endeavour to render beautiful, or at least neat and tidy, the surroundings of even the humblest homes. But unfortunately the ardent gardener of slender means is greatly addicted to disfiguring his dwelling and its precincts by erecting all sorts of patchy makeshift contrivances in which old egg-chests, corrugated iron, and ragged roofing felt combine in a riot of uglification. We are sure that Mr. Wright and Mr. Greening deplore this kind of thing as heartily as we do, and that they will include in their ambitious programme a reasonable regard for the look of things. Architects might do worse than join in this movement. They and the horticulturist have a good deal to learn from each other.

OUR EDITION DE LUXE.

AS in former years, we are this year issuing a special *Edition de Luxe* of the Journal, printed on art paper, and very fully illustrated, price one shilling. It will be dated December 30th, and will have for its special feature a valuable series of forty plates showing Garden Suburb Houses selected from the Hampstead Garden Suburb and Gidea Park, Romford. In each case the house has been specially photographed, and the accompanying plans and details have been specially prepared. The plates are arranged in a novel manner, and will not only serve as a permanent record of a remarkable movement, but will be esteemed as a valuable means for the thorough study of a peculiar type of modern domestic design and planning, in which comfort, economy, and amenity have each and all received the full consideration of many minds. In addition, the *Edition de Luxe* will include a section devoted to the illustration of notable buildings of the year; and there will be, besides, an illustrated review of the year's progress in reinforced concrete construction. A specially written descriptive and critical account of the year's architectural and building interests will also be included. As this issue is likely to run out of print very speedily, readers are advised to place their orders immediately in order to prevent disappointment.

CANADIAN ARCHITECTURAL PRACTICE.

By B. SATTIN.

The following notes on Canadian practice will be of interest to those readers of the "Architects' and Builders' Journal" who contemplate following their profession in the Dominion.

The English style of drafting is not altogether the same as the Canadian, although it is followed to some extent, as might be expected from the number of Britons who have migrated and are following their own training and instincts as far as possible; this influence modifying what would otherwise be more distinctly American. As it is, there is a difference notably in the absence of the use of colour and in the more mechanical drawing due probably to the prevailing demand for blue-print copies. No two offices will be found to follow exactly the same conditions, but it is the intention in these notes to show as far as possible the general practice.

Perspectives are not in much demand, although it is as well to be competent to lay one down in case of an emergency. Generally there is no time to spare for this subject, and if a finished perspective is wanted a specialist would be employed.

Once a client has decided on what he requires, he expects to have the sketches for approval immediately, and the architect is no less anxious to get the work pushed on; hustling being a strong characteristic of the country. Doubtless this habit is to some extent consequent on the severity of the winter, when locomotion ceases entirely on the lakes, and is rendered tedious on land by the intense frost, and building operations and the handling of material is so much restricted.

The quietest time in the office is between June and January to February of the following year; and a man going to Canada during this period must be prepared to find some difficulty in getting steady employment.

The greatest demand for help is during the early spring; and should a stranger then "make good," he may be fairly sure of permanent employment. And here it must be said that unless he is possessed of good abilities, with some working knowledge of structural steel-work and reinforced concrete construction, and is also a fairly good mathematician (but above all a quick worker) his chances of success will be very small. Credentials such as certificates are not of much use. In any case, he must be prepared to learn new methods and manners.

The first consideration then is the sketch for the client's approval. This is generally made in pencil on cartridge paper, to ⅛ in. or ¼ in. scale, and must be got out very quickly—say, in 24 hours. The sketch, if approved, is lined in more firmly in pencil if necessary, and a linen tracing made. Blue prints are then obtained, and the different tradesmen are invited to figure on the work. A somewhat brief specification has meanwhile been written by the architect, and from this the details are afterwards drawn. Should the total cost not exceed the amount the client is prepared to provide, another set of blue prints is deposited with the local authority for approval, and a permit obtained.

The details drawn in pencil to ½ in. or 1 in. scale and full size on cartridge or some other cheap quality paper, are prepared as called for by the contractors. Finished drawings on Whatman's paper, and inked in and coloured, are seldom seen.

It must not be assumed that, owing to the rapidity of production, the work done in the office is inferior in execution. On the contrary, the system calls for considerable skill and a perfect knowledge of what is required.

Should the drawings be for a house they are sure to include details for the fireplaces for burning wood or gas; and although quite English in sentiment, in execution they show certain variation from English practice. The Canadians and Americans, especially in the New England States, have a great affection for English characteristics as found in old buildings. A set of drawings of such a place as Compton Wynyates would throw a Canadian into ecstasies; but the New Englander would probably prefer a later period, the forerunner of the Colonial style. Although old English work is largely drawn upon, it is under very different conditions, and with different materials, and so a distinct style of architecture is evolved.

An American in designing strives for effect in the grouping of solid masses in contrast with space, rather than attempting to give prominence to detail, and one is reminded of the Roman Renaissance when studying their work. The grouping of old English work, on the contrary, is an accidental result, and the detail seems more prominent.

Unless a contract is of some magnitude, a clerk of works or superintendent is not specially engaged, the head draughtsman, in the absence of the architect, attending to this duty.

The separate contract system for the different trades is the general practice, and in this respect and in various other ways there is more similarity between the North of England and Canada than between Canada and the Southern or London district.

The profession of quantity surveyor is unknown, the contractors taking out their own figures, and their tender being based on the blue prints and specification.

The reader is advised to study American text-books—notably "Kidder," which is the standard reference book—and should familiarise himself with the following variations in value: A ton contains 2,000 lbs.; weights are stated in lbs. only, not cwts.; lengths in feet, not yards; a cubic foot of water contains 7½ gallons; a gallon of water weighs 8.35 lbs., approx. 8½; timber is sold by the M feet of board measure, viz., 12 in. by 12 in. by 1 in. thick, a piece 4 in. by 3 in. by 12 in. long would be 1 ft. B.M.; wall-papers are sold in single rolls 8 yards long by 18 ft. wide, and in double rolls 16 yds. long.

Here are some equivalent terms used in construction:—

English.	*American.*
Rolled-steel joist	I-beam
Wooden Post	Wooden Column
Steel Stanchion	Structural Steel Column
Fence Bar	Picket
Weathering	Wash
Random Rubble	Cobweb
Cut Stone (any face)	Ashlar
Patent Axe	Patent Hammer
Pointed Axe	Brush Hammer
Hammer Dressed	Rock Faced
Facing Terra Cotta	Furring
Chase Mortice	Bevel Shoulder
Mansard Roof	Gambrell
Ploughed	Plowed
Ploughed and Tongued	Feather or Slip-Tongued
Rebated	Rabbetted
Secret Dovetail	Blind Dovetail
Linings	Casings
Window Board	Stool
Weather Boarding	Beveled Siding
Double-hung Window	Box Window
Sprocket	Look Out
Firring	Furring
Skirting	Base Board
Lavatory	Toilet Room
Cupboard	Closet
Motor Car	Automobile
Shop	Store
Pavement	Side Walk
Surface	Grade
Planing	Dressing
Dust or Refuse	Garbage
Timber	Lumber
Boarding	Sheeting
Distempering	Kalsomining

The expression first floor or main flo is sometimes used in place of ground floo but is not general.

In designing a house, provide plenty cupboards or closets, one for each roo and not less than 3 ft. by 2 ft. 6 in.; al plenty of lavatory and bath accommod tion, usually three pieces, viz., bath, basi and pedestal w.c.'s. All pipes are inside t building, the soil pipe being heavy ca iron, but the service pipes are of ste nickel-plated. It is not essential that t lavatory should be on an outside wall, wi a window, as required under the Engli model by-laws. Ventilation is obtain by the use of flues and mechanical mean as the windows are closed in with stor sashes over them during the winter. The sashes have either a small pane to op or a still smaller opening in the botto rail, closed by a wood slip.

The suburban and country house is mo often constructed of wood with balloo framing of 2 in. by 4 in. studs, and 2 i by 8 in. plates on a foundation wall; t roof covered with cedar shingles laid 4½ i to weather on 14 lbs. asbestos paper, t walls being covered with siding or roug cast plaster on lathing nailed to ⅞ i sheathing. Balcony floors are covered wi painted duck.

The foundation walls may be of sto 18 in. thick, or of brick or concrete. N footings are put to brick walls, which a built directly on foundations 12 in. wide A subsoil drain is laid immediately over t outside offset, and is connected to the s drain at the nearest suitable place. trench 18 in. wide is cut outside wall and filled in with broken brick or ston The top of this finishes at grade lev which is just below the basement windo sills, or about 4 ft. below ceiling.

A gully for surface water is provided the centre of cellar floor, or the laundr which is placed on this level and fitted with Colonial tubs.

Plenty of coal space must be provide and a flue or slack for furnace formed brickwork below a fireplace if possibl Ash shoots from rooms above should arranged.

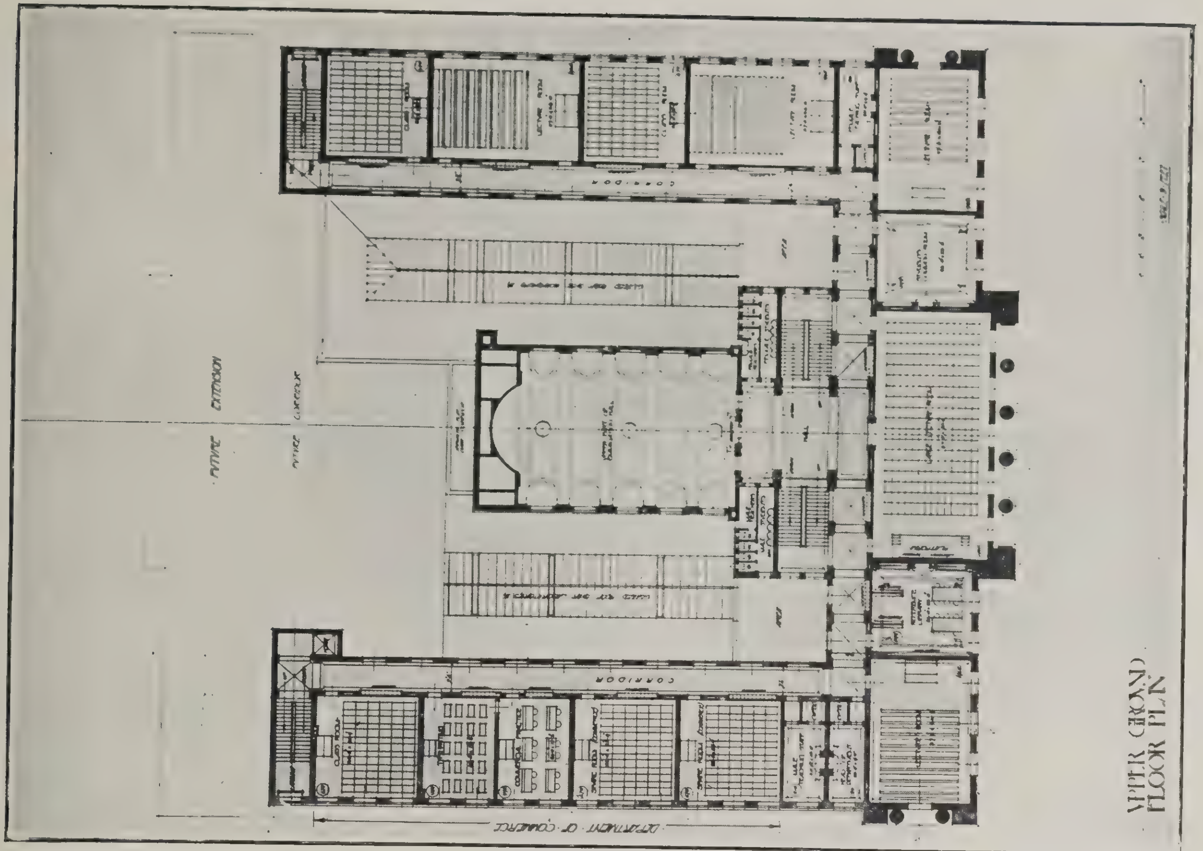
A standard width for a chimney bre is 5 feet. Flues are built square, 8 ins. 8 ins., or 8 ins. by 12ins., and lined wi square or rectangular earthenware tub

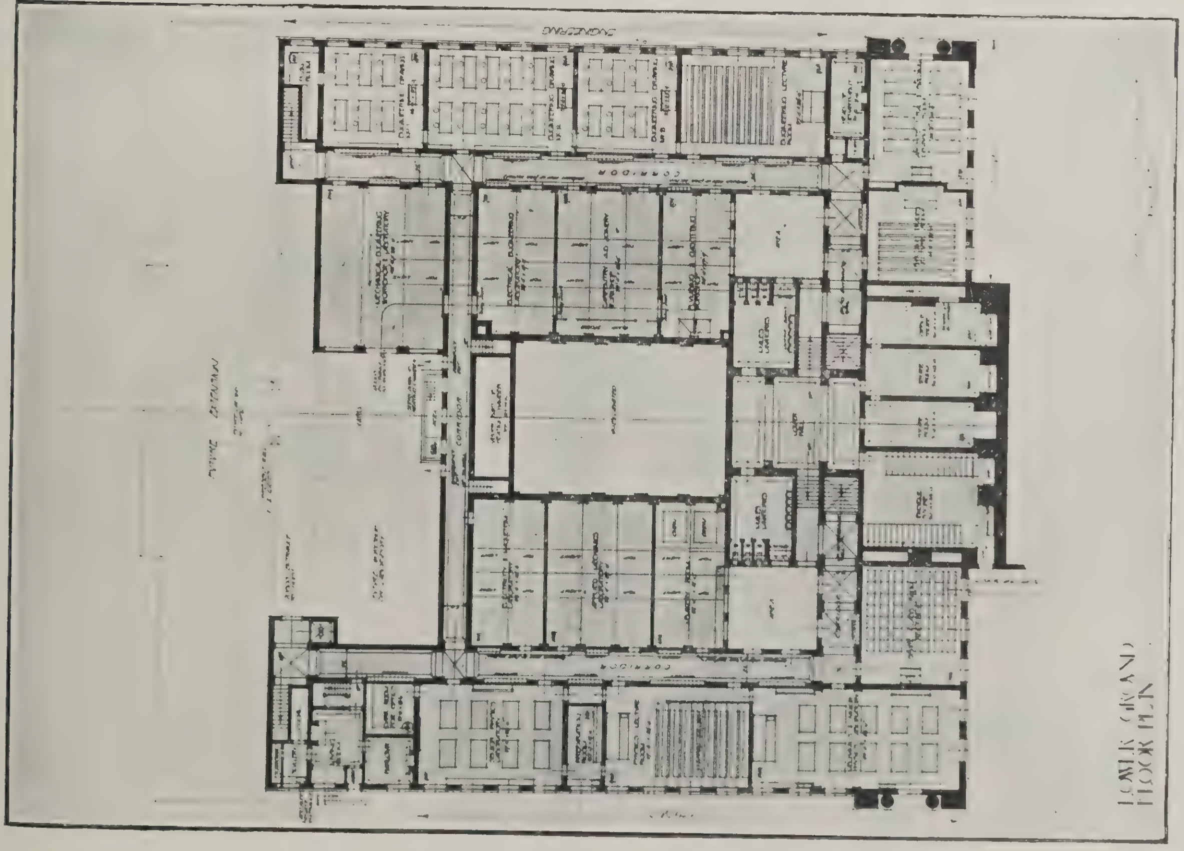
The kitchen range is a separate porta affair, standing clear of walls, with a she iron stove-pipe running to a flue in wal

Provision for a refrigerator must made in a cool corner, and on an exter wall. A usual place is on the grade e trance, with a drain to cellar for waste.

As the districts become more crowde and fire risks greater, the wooden fro are veneered with a half-brick wall secur to woodwork with metal cramps; and work of a better class the walls will be solid bricks. Hollow walls are not c tomary.

The whole surface of walls internal should be strapped and plastered to ke





CARDIFF TECHNICAL INSTITUTE; PLANS OF FIRST-PREMIATED DESIGN. IVOR JONES AND PERCY THOMAS, ARCHITECTS.

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t the frost, which will otherwise per-
ate from outside, and be a chronic
urce of trouble, the moisture freezing if
e room is not warmed, and when it is
en running down in streams.

Structural timbers are spaced 16 in.
ntres. Hemlock is largely used for rough
arding. Stairs are invariably framed
th open strings, and the spandrel under
finished similarly to the walls. Panelled
ming or boarding is not usual. Newel
sts are generally square, and built up
th $\frac{7}{8}$-in. boards on a pine core.

Ceilings are often broken up with false
box beams of $\frac{7}{8}$-in. boards on firring.

The interior trim of a room—that is, the
odwork to doors and windows—is more
en cut square, and not mitred at the
gles; the head of the openings being a
tle thicker than the sides, and running
ross with a capping. A favourite treat-
ent of wall surface is to break it up with
n. by 5 in. or 7 in. rails and jambs, one
a chain-rail, and another at level of
or-head, forming a frieze around the
om. In addition to the base-board, a
or strip is provided. The wall surface is
en covered with a coarse canvas called
rlap.

The cornice to above treatment may be
wood. A standard proportion consists of
ır members, viz., the fascia soffit, bed
uld, frieze, and crown, the cost being
lculated on the number of members, and
pieces must be out of 1 in. or a multiple
that thickness allowing for reduction in
wing and dressing.

Dove-tailing and ploughing, or groove-
d-tongue, are not used so much as
welling. Tenoning is also avoided, the
rk being nailed together. Beads are
o omitted.

t is as well to know that a carpenter is
own machinist. There are no joiners,
d all the work is run out by machinery.
designing mouldings, regard should be
d to this, and an ideal finish from this
nt of view is a splay to the top edge
the base board. It has the merit of
ng easily made, and looks well in exe-
ion.

Veneering hardwood on to a pine core is
general practice. A 2 in. door would
e a hardwood face of 3-16-in. thickness
each side, glued to the core, which is
med of strips glued together across the
lth (average size $\frac{7}{8}$-in. by the required
kness). In country districts, a door less
n 2 ins. thick might be solid, but the
eering is preferred, as it will withstand
ter the dry atmosphere and the extreme
ge of temperature.

umber is cut and sold in even lengths
, 10, 12 ft., etc., and, in designing, this
t should be kept in view. Scantlings for
penters' work are generally of the fol-
ing sizes:—Rafters, 2 ins. by 6 ins.;
ge, 1 in. by 10 in.; collars, 2 in. by
.; valleys 3 in. by 8 in; door frames,
ı. by 7 in.

t has been mentioned that a house roof
shingled. Within certain limits, how-
r, shingles are not allowed, and slates
then used. Another form of roof cover-
is the tar and gravel roof used for
ge buildings. Lead is never used, sheet
ı, tin, as it is called, being sub-
uted, and laid in the same way as
per; a sheet of tin is 14 ins. by 20 ins.
shings, gutters, and aprons are also of
On account of the large accumula-
of snow in winter flashings are carried
od height above roof to prevent soak-
during a thaw.

he massive cornices are often built up
heet-iron on steel framework.

ricks vary in size, and it is necessary to
rtain the size to be used before dimen-
s are fixed.

LEGAL.

Builders' Action Against a Bank.

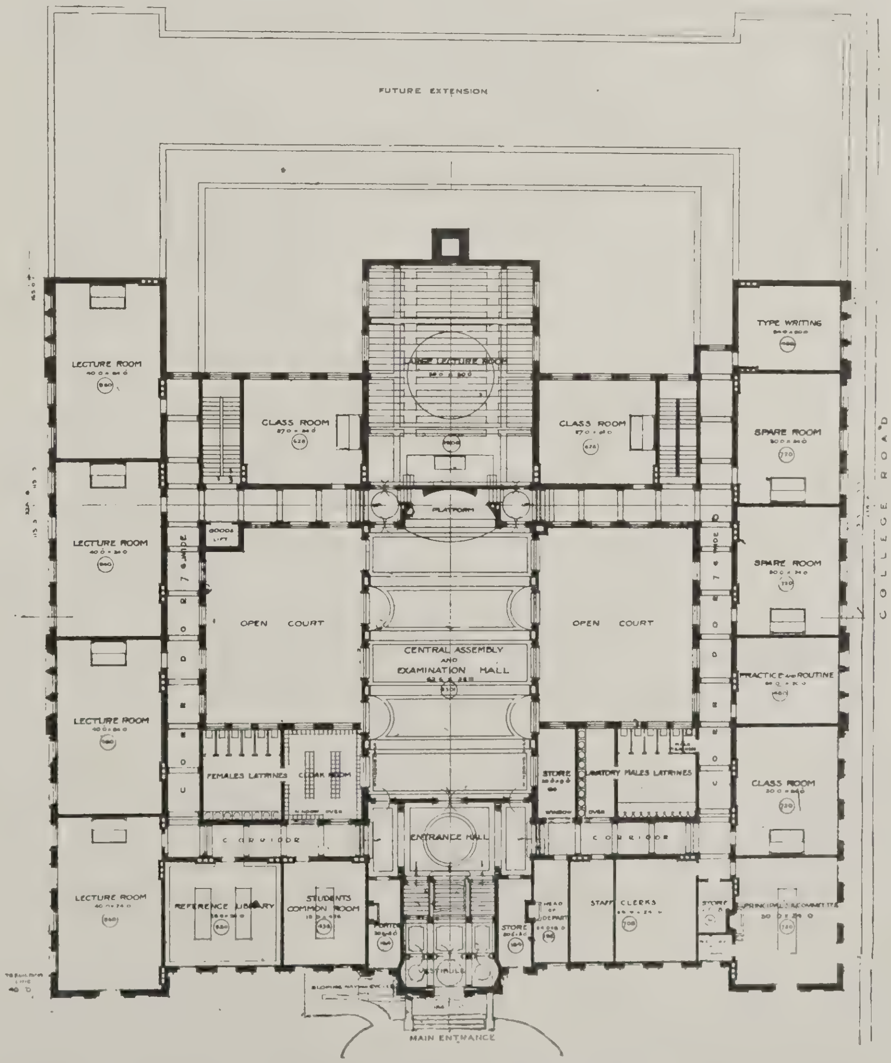
The hearing of an action to recover damages for libel brought by Mr. William Brown and his four sons, who have carried on business as builders and contractors at Salford, against the Union Bank of Manchester, Ltd., was begun on Monday of last week before Mr. Justice Lush and a special jury, at Manchester Assizes. Dr. Atkinson and Mr. Dehn appeared for the plaintiffs; and Mr. Langdon, K.C., and Mr. Sutton for the defendants. The case was tried at a previous assize before Mr. Justice Bankes, when the jury could not agree. The action arise out of the dishonouring by the bank of a bill of exchange and two cheques which the plaintiffs alleged they were under obligation to meet. The firm had done business with the bank for sixty or seventy years. It was intimated by counsel for the defendants that there was a complete answer to the case opened against them.

Mr. William Brown, the senior partner, was cross-examined with regard to an interview with Mr. Forrester, the bank manager, on July 29, 1909, when the arrangement for honouring the bill and cheques was said to have been made. He admitted that, in January, 1909, when rumours were current as to his firm's position, the bank gave him extra assistance.

At the resumption of the trial on the third day, Dr. Atkinson, for the plaintiffs, said that, having carefully considered the evidence, his view, and that of all those on his side, was that the litigation was the result of a misunderstanding, that there was no real agreement between the parties, and that the dishonouring of the bill and cheques was the result of misunderstanding and not of any breach of faith on the part of the bank. That being so, he only wanted to say at the earliest opportunity that the plaintiffs unreservedly withdrew every imputation against the bank, or its manager, Mr. Forrester.

Mr. Langdon submitted that upon that he was entitled to a verdict for the defendants.

The Judge said he was very glad indeed that the parties had come to that conclusion. He had come to the conclusion that there was no evidence at all of any bad faith or malice on the part of Mr. Forrester or the bank, though the question of whether there was any concluded contract binding the bank to honour the bill and cheques was still left to be litigated. His own view was what Dr. Atkinson had now stated, that the parties had not come to a real understanding on that point, though Mr. William Brown thought they had. That being so, he would have had to direct the jury to find a verdict for the defendants. He hoped the bank, in view of the long standing and friendly relations which had subsisted between them and the plaintiffs' firm for very many years, and the fact that a misunderstanding had had such disastrous results to the plaintiffs, would see their way to do something for



CARDIFF TECHNICAL INSTITUTE: UPPER GROUND-FLOOR PLAN OF SECOND PREMIATED DESIGN. COOPER AND SLATER, ARCHITECTS.

those who, through the misunderstanding, had suffered the great loss. The jury thereupon returned a formal verdict for the defendants.

Later in the day Mr. Langdon said the bank were prepared to do what he thought was a handsome thing by the defendants, and of course it followed that there would be no costs.

Replying to Dr. Atkinson, the Judge said that no judgment had been asked for or given.

Mr. Langdon said the defendants were content with the verdict.

The Judge: The verdict just deals with the finding of fact.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At the third general meeting (business) of the Session 1911-1912, held Monday, December 4, the following elections took place:—

As Fellows (5).

Barnes, H., West Hartlepool, and Newcastle-on-Tyne.
Bird, H. W. [*A.* 1897], Hong Kong, China.
Spain, J., Sunderland.
Wells, R. D., London.
White, H., Loughton.

As Associates (56).*

Adams, M. S. R., Chiswick, W.
Angus, L. M., London.
Barks, E. E., London.
Baxter, P. L., London.
Benians, H. J., Goudhurst, Kent.
Benslyn, W. T., Birmingham and Cambridge.
Bevis R. H. P., Southsea.
Blackford, A. G., London.
Broad, K. S., London.
Brown, B., Bradford.
Brown, M., London.
Bullock, J. E., London.
Clarke, L. H., Harrogate.
Davies, J. C. G., Glamorgan.
Davies, W. F., Liverpool and Chester.
Davis, C., London.
Edeson, C. A., Derby.
Evans, A. F., Liverpool and Prescot.
Finning, L. J., Exeter.
Garbutt, W. T., Bradford.
Gorringe, W. S., Seaford.
Goodwin, B. M., London and Croydon.
Hake, G. D. G., London.
Harding, C. A., Glasgow.
Home, G. W., London.
Howitt, T. C., Nottingham.
Keaseley, J. N., London and Redhill.
Knight, F. W., London.
Lawson, W., Newcastle-on-Tyne, and Gateshead.
Leroy, A. D., London.
Logan, P. N., Bristol.
Long, C. W., London.
Martin, M. R., Brentford and Ealing.
Mennie, F. E., London.
Merriman, H. I., London.
Mottram, A. H., London.
Owen, G. B., Sydney, New South Wales.
Parker, T. A., Bury, Lancs.
Paterson, J. W., Edinburgh.
Pritchard, I. M., Chiswick, W.
Samson, H. L., Westminster.
Swannell, C. M., London.
Swindells, F. H., London.
Tapper, M. J., London.
Thornton, H., Dewsbury.
Tickle, A. G. W., London.
West, H., London.
Westbye, J. T., Christiania, Norway.
Whitehouse, A. E. M., Manchester.
Wigzell, N., Sunderland.
Williams, L. E., London.
Wilson, A. W., Peterborough.
Winter, C. R., Bournemouth.
Wormald, H., Wakefield.
Wright, C., London.
Young, A. M. C., London.

As Hon. Associates (2).

Crane, Walter, R.W.S., Commendatore Royal Crown of Italy, 13, Holland Street, Kensington, W.
Marshall, John Hubert, M.A. (Cantab.); Companion of the Indian Empire; Director-General of Archæology in India; Benmore, Simla, India, and East India U.S. Club, St. James's Square.

Licentiates.

Ainley, C. E., Manchester.
Arabian, J.
Archibald, R. J., Middlesbrough.
Bell, C. W., Sunderland.
Bridges, W. H., Skegness.
Cooper, B.
Coyle, A. H., Baroda, India.
Davies, G. H., Pontypridd.
Dew, W. A., Hyde, Cheshire.
Diack, A. E. (Aberdeen).
Dyer, C. H., Bloemfontein.
Grazebrook, T., Stourbridge.
Greenhow, C. I., Newcastle.
Grieg, C. H., Edinburgh.
Hall, W., Oudtshoorn, South Africa.
Hilton, E. W., Altrincham.
Holdsworth, L., Wakefield.
Lane, G. W. C., York.
Lawson, V. A., Stroud.
Legg, F. G. I.
Lewis, J. M. (Madras, India).
Lowson, J., Aberdeen.
Macdonald, D., Dingwall.
Malvern, T., Cheltenham.
Margetts, W. T.
Miller, R. T.
Palmer, B. C., Lewes.
Pawley, E.
Reid, P., Kirkcaldy.
Scott, W. H., Cardiff.
Selwyn, S., Eastbourne.
Shipwright, W. G.
Sisley, H. A., Manchester.
Smith, C. B.
Spark, C. H., Sydney, N.S.W.
Stabler, A. W., Durham.
Stanford, J. H., Toronto.
Steer, W., Brighton.
Taylor, S., Burnley.
Townley, H., Manchester.
Viner, G. J. M.
White, J. D., Bootham, Yorks.
Wood, A. R., Burslem, Staffs.

Playing-card Factory and Warehouses, Camden Town.

The contract for a large factory and warehouses at Camden Town for Messrs. Goodall and Son, Ltd., playing-card makers, has been secured by Messrs. Patman and Fotheringham, 100 and 102, Theobalds Road, London, W.C.

New Insurance Premises, Derby House, St. James's Square.

In the list of contractors who were engaged in the work at Derby House, St. James's Square, for the English and Scottish Law, Life Association (see the Journal of December 13th, page 620), the name of Messrs. J. Tylor and Sons, Ltd., sanitary engineers, etc., Belle Isle, York Road, London, N. (show-rooms, 232, Tottenham Court Road, W.), should have been rendered as here shown.

CORRESPONDENCE.

The Editors disclaim all responsibility for t statements made or opinions expressed correspondents.

Correspondents are asked to be brief, and write on one side only of the paper

Manchester Art Gallery Competition.

To the Editor of the "Architects' an Builders' Journal."

Sir,—In your "Competition Notes" the issue of December 13th, we noti you say that the Manchester City Counc have "decided not to proceed with th project." This is hardly correct.

It is true that an alternative scheme f erecting a Municipal Exchange (on th same site) is now under consideration, b until the Committee appointed for the pu pose have presented their report, no fin decision will be arrived at by the Ci Council.

While there is doubtless some unce tainty, the Library and Art Gallery schem is not dead yet.

Crouch, Butler, and Savage.

39, Newhall Street, Birmingham.

[The context of the phrase quote shows, we think, that we did not regar the matter as having been finally settle and we have never entirely abandon hope that the winning design may yet tak substantial form.—Ed.]

ESTATE PLANNING IN CHESHIR

Sir William Lever has purchase through the instrumentality of Mr. Hov ard Frank (Messrs. Knight, Frank, an Rutley), a portion of Lord Shrewsbury estates, embracing the villages of Ra and Bromborough and parts of Barnsto and Thornton Hough, Cheshire. T gether with the Storeton property, whic Sir William Lever lately acquired, constitutes an area of between eight an nine square miles, extending from th Bromborough Golf Links into the boroug of Birkenhead. Sir William Lever i tends to set aside some of his land for u as an experimental farm, which will maintained at his own expense for th benefit of the tenantry. He is also co templating the improvement of the pr perty by the rearrangement of the road Speaking at a tenants' dinner at Thornt Manor, he said that to anyone startin from Birkenhead Wirral seemed to be mere tangle of roads, and what he pr posed was to cut a main artery rig through the centre of the estates, couplin it up with the existing roads, so that o could get in the shortest possible ti from Liverpool and Birkenhead acro the peninsula. By this road the farme would find a direct and quick means getting to Birkenhead and Liverpo markets with their produce. That wou be a great improvement to the estate, an it was possible that it would lead building developments, though for hi self he had no idea of embarking in th enterprise. His sympathies, however, la greatly in the direction of getting town people to reside in the country, and believed that farmers would greatly ben fit from it, as they had done in relatio to a garden village that he knew in th South of England. He believed that a he was proposing could be carried o without injustice to anyone, but with a vantage to all. By co-operation farme might reduce expenses in various wa while increasing their incomes.

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*All the applicants for Associateship passed the Qualifying Examination in June last.

S THE TEXTURE OF MATERIALS A FETISH ?*

By ALAN E. MUNBY M.A., A.R.I.B.A

In his paper read before the Architectural Association on Monday, December 11th, Ir. Alan E. Munby, while discussing the charm of texture peculiar to various materials nd conditions, preferred not to answer himself the question contained in the title of his aper, but to leave it open for discussion.

TO begin with, what is texture? One's first impulse is to appeal to Dr. ohnson and digest his definition, but the nderstanding of terms is not really ynonymous with the defining of them, nd it is the understanding with which we re now concerned. We probably all nderstood the feelings of the artist reently depicted in "Punch," who, on being sked in a restaurant by the amazed hyllis whether he were really going to ake brown sugar with an ice, replied: I am, though; it gives it a texture." We ll know that a vanilla ice, with its abence of life and its unvaried surface, ould be vastly improved in appearance y the addition of brown sugar, reflecting ght in various directions and presenting regularities of surface which must add nterest and thus tempt investigation.

Texture and Variety.

It is with this question of variety that, I ake it, texture is mostly concerned. Why a Tube station built of glazed faience holly unpleasing to the senses, when a ilapidated plaster cottage, stained and eathered with age, is able to charm our ision? Does it not depend upon the ariety displayed by the latter? Select ny particular feature of the plastered all, say a brown stain, on a sufficiently inute scale to deprive it of variety, and epeat it as the whole wall; the effect is ull and devoid of interest; the surface ould lack texture owing to repetition. Ve are, be it observed, speaking of repetion of featureless surfaces, not repetition f architectural forms; few, indeed, would riticise the view that repeated architecural features, if these are initially good, ake for repose and stateliness in buildg more than anything else.

If, then, we are to attempt a definition f texture, it should perhaps be variety on minute scale, and we have now to inuire as to the nature of this variety. Has a real existence as a physical entity, nd, if so, does it appertain to the marial itself, or to the conditions of our spection as regards light and atmohere; or is it a thing merely of artistic ultivation or inborn feeling; or result f mental training, whereby some and not thers are affected?

Perhaps these questions are best nswered by taking some individual subances and considering their physical properties and conditions of inspection.

Texture of Brickwork.

Let us take the material which forms e external surface of the vast majority buildings in this country—brick. There re some hundreds of varieties of bricks, t we will confine ourselves to the conderation of two. If we go north of the rent and examine some of the importt brick structures we shall find that the essed bricks of Accrington have a great gue. They are a dull red, with a semitrified face, and therefore are nontentive of dirt and not subject to surface osion; moreover, they are large, being full 3in. thick, like most North-Country icks. Very little variety is to be obrved in them, and the mellowing hand of time offers to such materials in vain the insidious germs of decay. As they are built up so will they remain in tone, character, and semi-sheen.

The Charm of Hand-made Sand-faced Bricks.

Now turn to the little hand-made sand-faced bricks, such as those obtained from Clare, in Suffolk, rough, rich in purple patches, and bubbling with variety. Why do they charm us? Is it not their irregularity? A sand ripple here, a flint there, a purple header to the right, a brown one to the left; it is surely variation which produces upon certain minds a sense of artistic satisfaction and a quiet feeling of repose and harmony. This state of mind, however, is not universal. I remember a builder who had much admired an architect's work express his disapproval in no measured terms at the (to him) inartistic effect of mortar joints an inch thick; and I have heard the exclamations of approbation from a clerk of works on viewing a tiled roof of hard-pressed tiles laid with a mechanical precision worthy of a dividing engine. Whether such approbation came from a well-ordered mind or from one untutored is for your decision this evening. Brick architecture is, indeed, capable of an immense variety of expressions according to the size and nature of the component bricks, quite apart from architectural treatment, and Nature lends further aids with her soft touches of vegetation. One of the most beautiful pieces of brickwork I have ever seen is that composing the Almshouses at Audley End. There is nothing very striking in the design of the buildings, two brick string courses, brick mullioned, circular-headed, leaded windows, very irregularly spaced, and running out of the main line of roof; gables in brick, some of them unwindowed.

But the rich mellowness of the whole building bemossed and lichened, as I recently saw it, in the full glory of a sinking sun, left a most vivid impression on my mind.

Effects of Weathering.

It is curious to note withal that, whether texture be a fetish or not, the forces of Nature seem to treat more kindly those materials which possess the charm of irregularity of surface, than those which attempt to exclude her weathering and eroding agencies. The hand-made tile, rough and absorbent, which makes a home for the seedling and the moss spore, is oftentimes when removed found to be as hard and durable as though made yesterday instead of a century ago; whereas the pressed tile and the terra-cotta block, unless made with consummate care, soon flake and shell, giving an appearance of dilapidation which is anything but pleasing, because it is the direct result of mechanical disruption. But even bricks and tiles are to some extent artificial, and what texture they possess is the result of mechanical treatment. Let us now turn to some materials of Nature's own composing and see whether this quality of texture is really a thing to be found in the mineral products of the earth.

Stonework.

What of stone? We must dismiss from our minds the lofty Gothic spire, with its delicate outline laid against a blue vault of sky, or the civic dignity of a Renaissance façade, and think only of the flat surface of an individual piece of stone.

In our big cities we are apt to employ stone from too purely an architectural standpoint—i.e., to utilise it for the expression of conventional features more than for what it can do of itself. Perhaps the unequal struggle between the material and the enveloping effects of city grime is an excuse for this attitude, but away from the town the material may be given scope for its own efforts unaided by form, which, on the score of cost, often proves its only possible use. Would, indeed, that it were more often so employed, and that the designer would stay his hand on the production of his fretful and pretentious ornament, and retain his masons' wages in exchange for a little thought in the selection of his material. That stones differ in texture is a proposition which hardly requires proving, but how much they differ is perhaps not generally realised.

Coarseness of Grain.

Again, we find that when we rely on the material itself for effect, coarseness of grain provides, at least to the possibly disordered brain of the artistic, the greatest sense of charm. A plain window dressing in Ham Hill stone is delightful; the same treatment in York stone is dull and mechanical. In London we all use Portland stone, but whether it is because we have been brought up on the pabulum of successive repetition in the matter of specifying, or because the builder has a sacred horror of anything outside the oolite formation, has never been quite clear to me.

Timber.

Now let me turn to another material of Nature's own production—timber.

For nearly all purposes for which timber is required in situations in which its characters can be observed, it is wrought, and therefore any texture it possesses must be due to the porosity and markings of the material. No timber to my mind is more attractive than that left clean from the plane and innocent of paint or varnish. Such absence of treatment is not always possible, however, nor desirable in all situations, but where protection is required beeswax rubbed into the pores of the wood in a suitable solvent will still allow the texture of the surface to remain, and will not prevent the timber from toning. Naturally, wood which is figured and which is cut to display the figure to the best advantage presents more attraction than unmarked timber; but even a piece of yellow deal will, after a few years of exposure, assume a tone which has much individuality. That woods, even the same class, differ considerably in structure and hence in texture was evident in viewing the sections of a few timbers which the author showed in the lantern.

Flat Surfaces.

Compare the effect of an old chair possessing the hand polish which continual use can alone afford with the same piece of furniture varnished after leaving the cabinet-maker's shop. The wood is the same, but the texture is, in the former case, brought out and the tone of the wood mellowed; whereas in the latter such variety as the wood possesses is at least partly concealed by the unbroken gloss of the varnish, which reflects much of the light falling on it direct from its outer surface. In this connection it is of interest to note the growing public appreciation of flat as against bright surfaces. A flat surface allows the penetration of light, and hence admits of a truer appreciation of the nature of the substance, more especially when viewed obliquely. The more the light is reflected from the surface of a body without penetrating into it the less will the particular characters of the substance on which the light falls be transmitted to the observer's eye, till in an extreme case we get a mere mirror, itself a characterless thing, returning the light exactly as it receives it. We may therefore take a perfectly reflecting surface as the antithesis of texture wood, which leads us to a mental reflection on the metals which perhaps of all our materials show the least texture, and, apart from cases of imposed form, a surface of metal is not usually regarded enthusiastically for architectural treatment. Yet metals are not textureless, and all have in reality a crystalline structure, which may be brought out by etching their surfaces. Our dependence on texture is well illustrated by reflecting on the distress we should experience did a client insist on his house being faced externally with sheet-iron plates; but new methods of construction are constantly calling upon us, and, should means be found to circumvent the atmospheric oxidation of iron, such a problem might be assigned to any of us. The economical treatment of a façade comprising only textureless materials might well form a subject for a prize essay. Where a metal is soft and easily oxidised it is naturally amenable to assuming a texture through irregularities of surface.

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*Substance of a paper read before the Architecral Association on Monday, December 11.

Old Lead.

Old lead, particularly if cast, even in a plain waterpipe, may be very attractive to those possessing a certain mental attitude. Yet that roughness of surface does not constitute effective texture even in a metal seems to be proved by the (at least to some of us) horrible appearance of metals applied in the form of powder to surfaces. Aluminium paint, for example. It is possible that in such cases the sense of unreality causes in honest minds a feeling of revulsion similar to that produced by 5in. by 1in. stained deal—garden-city "oak" half timber-work—but the psychological dissection of one's feelings and the exclusion of bias in the matter of one's attitude towards so complex a thing as texture is beyond my mental capacity. I have endeavoured to deal with some more prominent materials individually, but the conditions of their inspection must not be overlooked.

The question of atmosphere in connection with texture was raised at the beginning of this paper, and undoubtedly atmospheric influences do affect the feeling which materials display. I have never seen a Tube station nestle even in a London fog at sunset, but undoubtedly the hardness of its lines is lessened and its enamelled surface is deadened. Distance does, indeed, often lend enchantment, because of the softness it imparts, and possibly more owing to the inventive scope it gives to the mind, which mentally fills out the picture in a manner best suited to the timbre of the observer.

Atmosphere.

Atmosphere is not, however, merely an abstract artistic expression; a definite absorption of light takes place between its reflection from the object in its passage to the eye of the observer, so that the objects viewed through vacuous space would not have quite the same appearance as those viewed through air, more especially if that air contains, as it generally does, floating solid particles.

The irregularities of a surface are interpreted to us by means of light and shade. It is the shadow cast by the projecting pebble which makes its projection apparent, and the strength and sharpness of that shadow will depend upon the nature of the light and the distance of the object. The sharp black shadow such as is cast by an arc-lamp is not wholly pleasing; its contrasts are too violent, and deprive the subject of that continuity which is essential to artistic effect. Atmosphere, by toning down the shadow effect, gives in the beautiful half-tones, the soft, almost inimitable graduations of light upon a rounded surface, which form so essential a factor in repose.

"Eve's golden rays
Falling on glade and stream,
Flecking the forest path with slanting beam
Made glorious by her minister the shade,
Sinking through the distant air
The purple haze."

The Colour Factor.

There is still one great factor in connection with texture which I have not touched upon, and that is colour. It would be impossible to trespass upon your patience by attempting to give any details on this subject, which has been often treated from an artistic standpoint in more scholarly effusions from this rostrum. Physically, however, colour is due to two things—the composite nature of most sources of light, which are really made up of coloured rays, and the power of most bodies upon which such rays fall of absorbing some of these colours more than others, and thus reflecting a mixture of rays dissimilar to those falling upon them. Ordinary sunlight and some artificial lights (such as acetylene) are composed of the various colours seen in the rainbow, which mixed together produce the sensation of white. When such light falls on a red brick most of the blue rays are absorbed and converted into heat; the reflected light, therefore, contains such a preponderance or red rays that the object appears red. It is obvious from these considerations that the further light penetrates into a light-selecting or coloured body the deeper will be its colour, since the less will be the amount of unaltered light merely reflected from its external surface. This is well illustrated by the fact that transparent coloured bodies in large pieces are deeper in tint than the same substances in the form of powder. As it can hardly be denied that texture is affected by colour, this quality must then be influenced by the nature of the light in which the body is viewed. If proof is wanted, it is only necessary to repeat the make-believe ghost stories of our children's days and enter a darkened room with a flame tinted with sodium vapour from salt. You will readily observe the changed appearance under these conditions of the coloured bodies.

The wonderful play of colours which we value so much in many materials, the beautiful veins of marble giving us greens, reds, and yellows; the warm, cheering tint of Ham Hill stone; the blending of purples, browns, and reds on our sand-faced bricks are all due to the wonderful variety of absorptive properties possessed by bodies of slightly differer chemical compositions. Further it noted, nearly all colours in material are due to that, at least in artistic circle much-abused metal, iron, in an oxidise form.

Æsthetics and Mechanics.

I have endeavoured to show that th texture of materials, the existence which, I think, it is not proposed to den depends upon various factors operating i various degrees. Some of them are ce tainly psychical, and are thus amenabl to the application of scientific investig tion; others are, no doubt, temperamenta and hence are hardly reducible to distin terms in the present state of psychologic research. I take it that you have n called upon me to answer the questio which forms the title of this paper. may be that the correct attitude toward texture is that of the mechanically traine mind, which makes symmetry of for down to the last mathematical detail fetish. and that the worship of the irregularities which constitute texture a the outcome of a disordered brain di torted by long hair and a velveteen coa The decision I leave to you.

DISCUSSION.

Mr. A. R. Jemmett, proposing a vote thanks, said it might be asked, "Wh was a fetish?" A fetish, he took it, w a sort of false god, and, regarding it such, he was inclined to think that th great importance attached to texture nov a-days was most distinctly a fetish. I modern domestic work material was ofte given more attention than form an proportion. Architects let the form "happen," as it were. In the Gree temple and the Gothic cathedral, materi was of little importance. The fine effec were mostly obtained when it was impo sible to see the texture; and the Parthenon for all the effect it derived from textur might have been cast in cement. Whe they approached near to a building the lost the effect of the whole, and were onl able to observe it in its details. If, hov ever, they walked away to the distanc perhaps, of a quarter of a mile, the te ture altogether disappeared, and the were conscious only of mass and the pr portions of solids to voids.

Mr. H. D. Searles-Wood, seconding th vote of thanks, drew attention to an albu on building stones, in the Institu Library, to which Mr. Munby had contr buted an interesting introduction. H wanted to know, he continued, at wh period they were to judge texture archite turally. Brickwork with wide mort joints looked very attractive when nev but after a few years its appearance w considerably altered by the damagin effect of the weather. There is a poi when the picturesque ceases and the pai ful begins. Small bricks he regarded a fetish at the present time. Bad bondin was a characteristic defect in their us unless the courses were taken through th entire width of the wall. With regard the action of light upon colour, he woul be glad of an explanation of the fading colours in materials.

Mr. J. D. Crace said, with regard variety of colour in bricks, he thought w should confine the subject of texture actual surface, and not include the ming ling of colours. Certain stones, he co tinued, were adapted only to certain cl mates, and required a definite and diffe ing treatment of mouldings and other d tails. It would be absurd, for instance,

it the same sort of detail on Ham Hill
one as would be put on Portland stone.
was not advisable, therefore, to judge
e character of a stone merely on the
estion of texture. Woods were much
ore beautiful in effect when left un-
lished, or with only just sufficient of it
give the necessary protection. Mr.
unby had advocated wax in a solvent.
e suggested that the solvent should be
ft out. It would inevitably come to the
rface and prove a nuisance by its ad-
sive properties. Soft wood should be
lished, but hard wood should not.
uminium paint, continued the speaker,
d not possess a metal surface; it was
nply a metal in a vehicle. It was surely
fact that in some positions metal and
xture were combined. They would not
ject to the natural surface of wrought-
on, which had the same advantages as
e natural texture of wood. Was there
t considerable risk of trusting too much
adventitious circumstances in the use of
aterials? When considering architec-
re as an art, these variations assumed a
sitive insignificance; each material
ould have its own particular treatment.
henever he had been present at a dis-
ssion on colour decoration people would
estion whether it was more successful
oil, tempera, or fresco. This was alto-
ther apart from the merit of the work;
rangement of colour had nothing to do
th method.

Mr. T. L. Dale said that in large build-
gs texture was a matter of but small
portance. But in the small ideal homes one should thank the gods if the bricks alone were interesting. In a very small object like a piece of jewellery or porcelain the texture would be very fine, and in scale with the size of the object. Proceeding up the scale, they would arrive at texture in large objects. In the Houses of Parliament, as an instance, the size and disposition of the masses produced the effect. In the ideal villa, texture was the only thing that could be made at all interesting. If they had only a plain wall they could surely afford to put texture into it.

Mr. H. W. Brittan said he always thought that the Greeks snubbed material, from being all that they seemed anxious to attain. In garden suburbs, he continued, the contrasts were far too violent. Instead of getting natural variations in bricks, the makers had produced an effect of forced variation.

Mr. A. E. Bullock having contributed a few remarks,

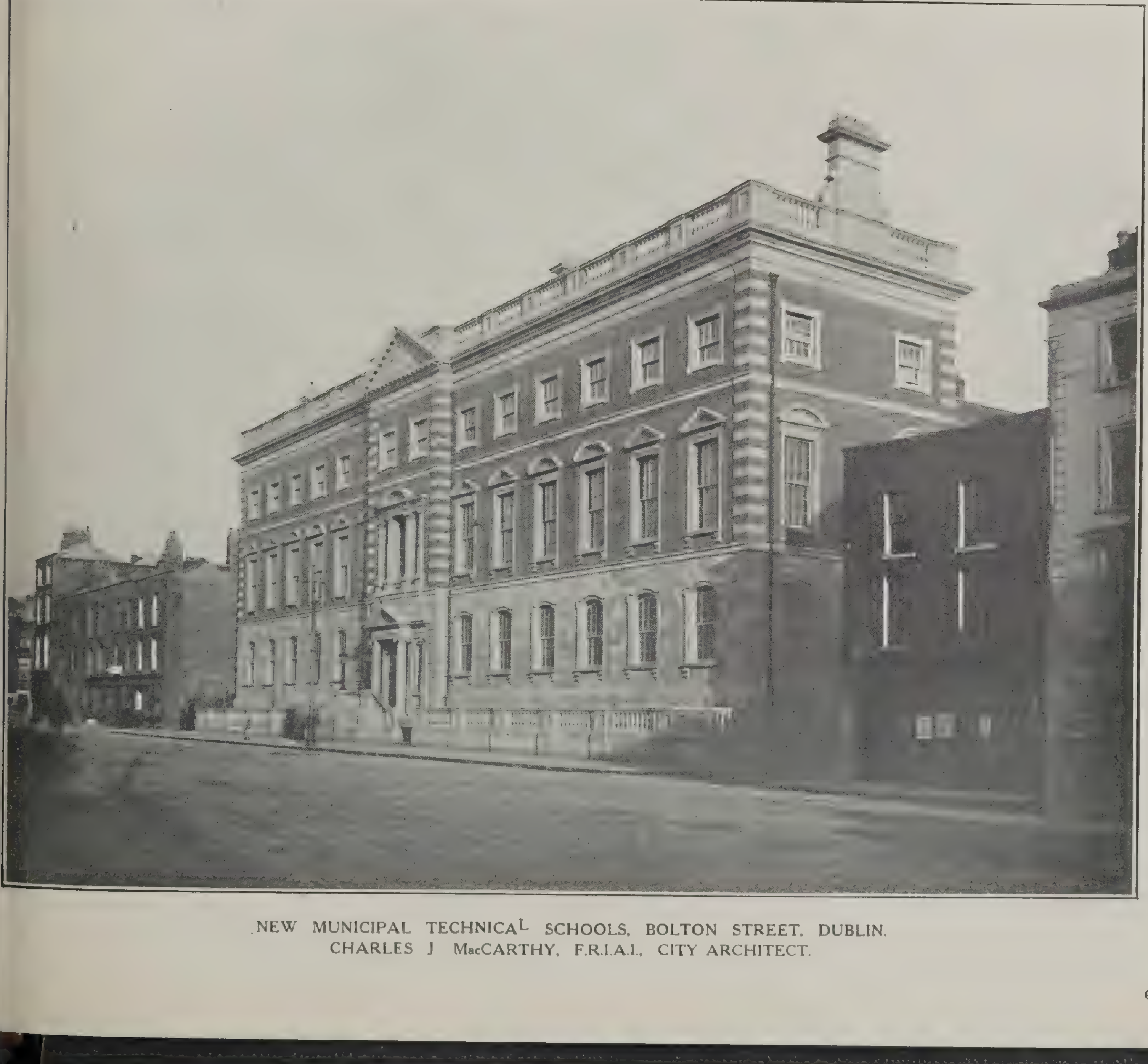
Mr. J. B. Scott protested against the disposition to think that design must necessarily be neglected and left to take care of itself if any attention is given to texture in materials. And why should they look at a building half a mile off? Buildings thrust themselves under our noses, as it were, every day, and there was no reason at all why they should not be made pleasant to look at.

Mr. Alec. Horsnell said it was a fetish to turn a sand-blast on to wood carving; it might give texture, but it was hardly a fair method to adopt.

Mr. T. C. Yates drew attention to Butterfield as an architect who had failed to produce texture, mentioning Keble College as an instance in which this failure was particularly apparent.

Mr. C. G. Boutcher said he would respectfully ask by what authority Mr. Munby had included colour in texture. Surely a distinction was to be drawn.

Mr. Arthur T. Bolton said that colour and texture were intimately connected. As an instance of this he mentioned some old London chimney-pots, of a red orange colour, which had once attracted his notice. When looked at from a distance they appeared to be black. He did not agree with Mr. Jemmett that the Parthenon would look the same if cast in cement. Someone (Mr. Chisholm, he thought) had enquired into the peculiar appearance of the Taj Mahal, and had discovered that it was due to the translucency of the marbles, which modified the shadows. The marble of the Parthenon was a sort of Sienna brown. This translucency would modify the shadows just as it did in the Taj Mahal. With respect to Keble College, Butterfield himself had said his buildings would take 100 years to mature, and, of course, this period had not yet expired. Referring to Westminster Cathedral, Mr. Bolton said that, instead of using bricks costing about £5 or £6 per 1,000, it had always seemed to him that it might have been built with common stocks, and perhaps have looked finer. With regard to the timber ques-



NEW MUNICIPAL TECHNICAL SCHOOLS, BOLTON STREET, DUBLIN.
CHARLES J. MacCARTHY, F.R.I.A.I., CITY ARCHITECT.

tion, he had used wax in a solvent (spirits of wine), and produced a remarkably fine effect.

Mr. Gerald Horsley, putting the vote of thanks, said that in old times design undoubtedly counted for more than texture. It seemed, too, that the old builders had in mind (if not texture) the effect of colour. Nowadays we had lost sight of colour. Each material should have its own treatment; but it was difficult to discover what that treatment was. He remembered visiting a church which had a fine roof of plain deal; after a few years he returned to find that the churchwardens had had the roof varnished all over! Of course they could only find out in practice what the best method of treating a material was.

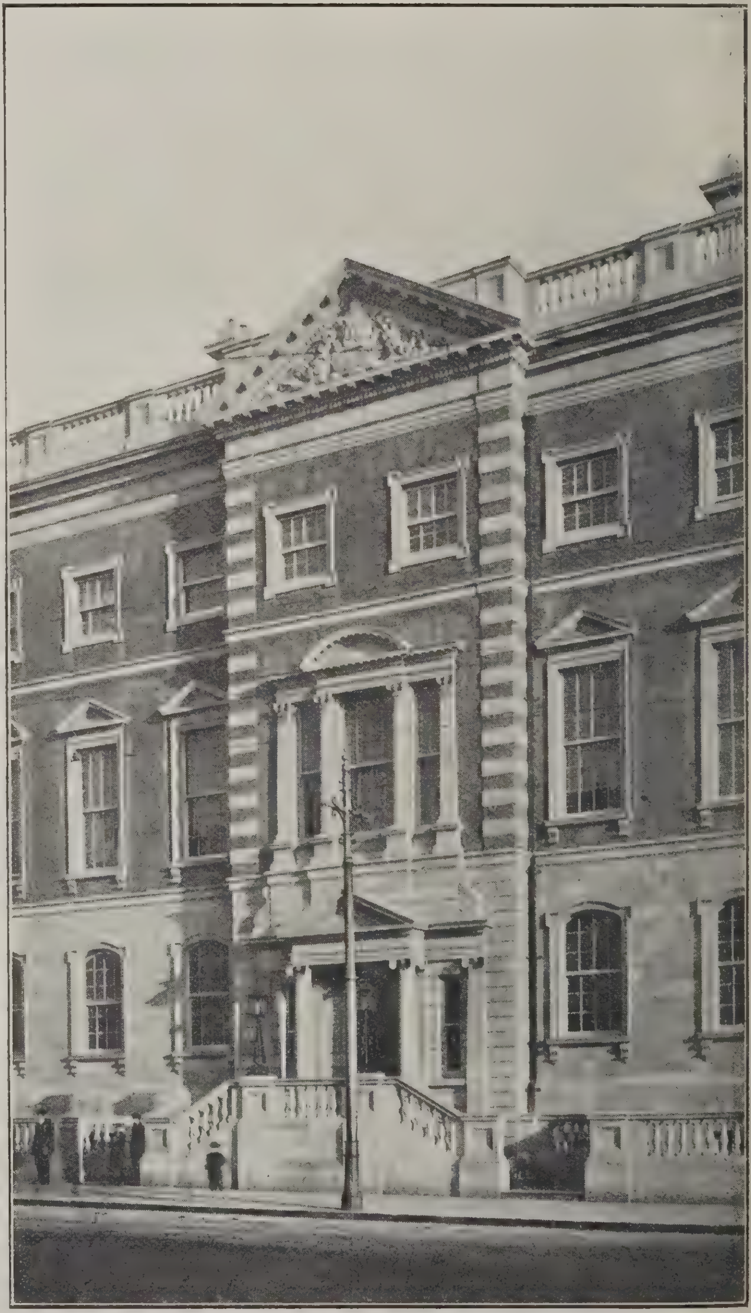
Mr. Munby, in reply, referred to many of the points raised in the discussion. The identification of stone, he said, became a very easy matter by the use of rock sections, which could be cut for about eighteenpence each. It was now possible to get 2in. stock bricks, and there was no reason why a good bond should not be obtained if used right through the thickness of the wall. The fading of colour was due to actual physical decomposition. Ham Hill stone was suitable in places like Montacute, where there was a certain amount of carving carried out on a bold scale. Mr. Munby asked: How was it possible to get wax or other material into wood without a solvent? If they could employ solvents like spirits of wine or turpentine, which evaporated, there was no reason why they should not be used. The Science Committee, continued Mr. Munby, were now trying to discover the reason for disasters in roofing tiles. He had been talking recently with a tile manufacturer in the Midlands, who had said that people would have roofing tiles of a light tint. To obtain this tint the tiles were not sufficiently burnt, and this, of course, was the secret of the trouble. He did not think personally that the worship of materials was overdone by architects. Texture, he agreed, was essential in works on a small scale.

NEW MUNICIPAL TECHNICAL SCHOOLS, DUBLIN.

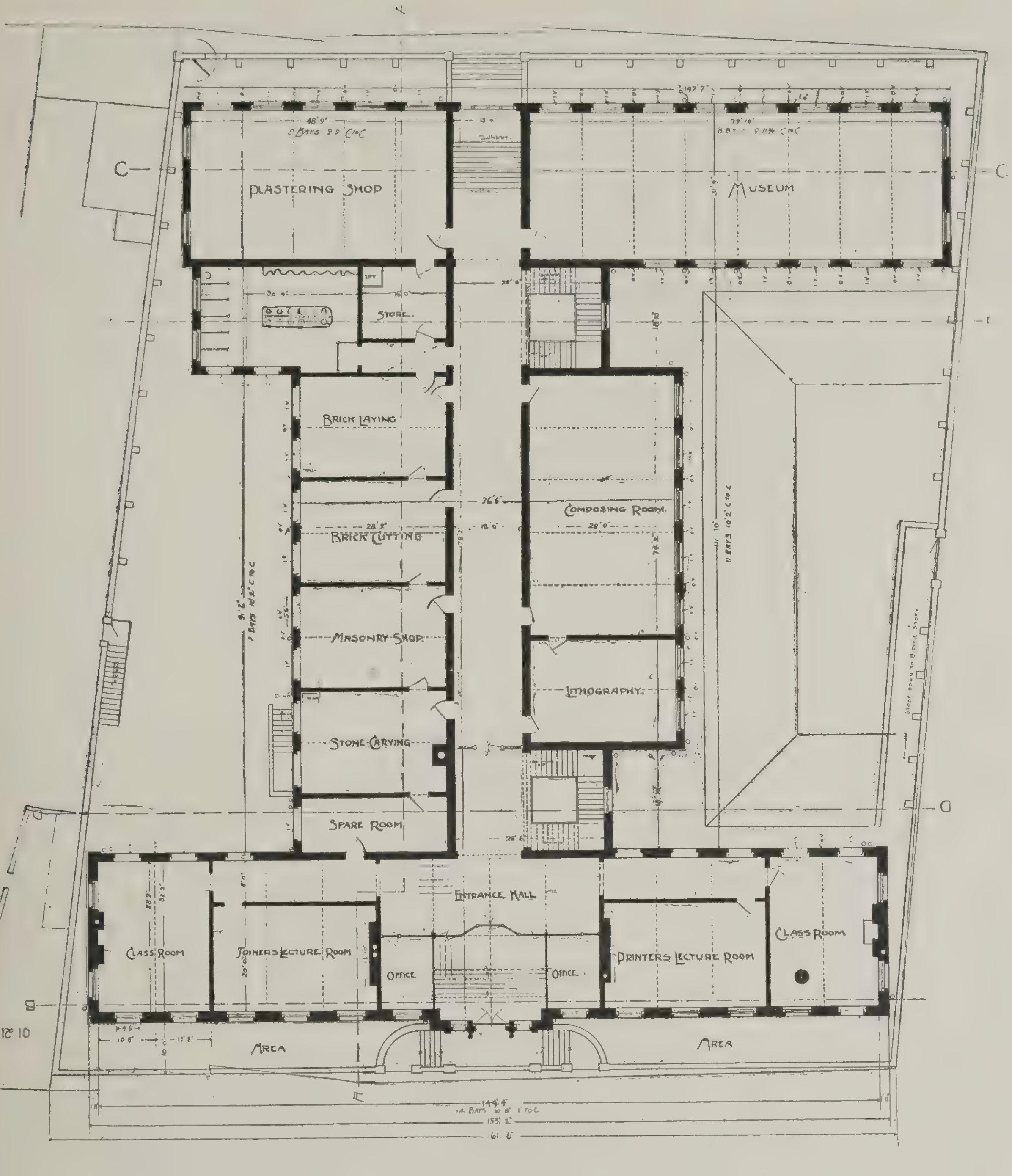
Having a main frontage of 150 ft., with a depth of 176 ft., the new Municipal Technical Schools which have been recently completed in Bolton Street, Dublin, form a striking addition to the architectural features of the Irish capital. The materials throughout were as far as possible of Irish origin, the stone facings and dressings of the frontage being from the Mount Charles quarries, Donegal, while the red facing bricks are from Portmarnock, Co. Dublin. The stone staircases, internal and external, as well as the sills, etc., are from the granite quarries of Ballynockin, Co. Dublin; and the wrought ironwork of the staircases have been manufactured by Messrs. J. and C. McGloughlin, Ltd., of Dublin. The administration departments and some classrooms are in the front block, the rear being occupied by the lecture theatre, laboratories, and workshops. Mr. Charles J. MacCarthy, F.R.I.A.I., City Architect, designed the buildings, and the contract, amounting to £34,000, was executed by Messrs. H. and J. Martin, of Dublin. For the illustrations here shown we are indebted to the courtesy of "The Irish Architect and Craftsman" and of the architect.

MAGAZINES AND REVIEWS.

The "Art Journal" starts with an editorial article on the relations of "Artist and Dealer," which are supposed at present to be not in a satisfactory state. The complaint of artists, apparently, is that dealers take advantage of the necessitous condition of artists to acquire works from them at a low price, and then take advantage of the demand occasionally arising, under special circumstances, to sell these works at very enhanced prices, and realise a disproportionate profit. The complaint of dealers, on the other hand, is that some artists have rather confused ideas as to the sale of copyright in a work of art, and that dealers who have acquired, or believe they have acquired, a sole right in the sale, for instance, of an etching or a collection of etchings, find copies of these sold by the artist in a manner that undermines their rights. Probably the author of the article is right in supposing that some of the causes of complaint on both sides arise more from a misunde standing than from any intentional desi to act unfairly. We should be inclined think that this explanation is more a plicable to artists, who often do not we understand business arrangements, th to dealers, who probably understand the very well. Sir Claude Phillips conti butes an article on some famous Frenc dancers, the chief interest of which co sists in the engraving after Lancret's po traits of the said dancers. The archite tural interest of the number centres in article on a Dutch mansion, Amerong Castle, built in 1678, on the site of a hou burned by the French in 1675. It is ve like an English house of about the san period, and suggests that the Queen An style of house owed a good deal to Dut influence and precedent. Amerongen w the work of an eminent Dutch archite Cornelius van Riesvelt, the designer the Amsterdam Town Hall. Mr. Tho son continues his articles on "Tapest weaving in England." The tapestries



NEW MUNICIPAL TECHNICAL SCHOOLS, DUBLIN: CENTRE OF BOLTON STREET FACADE. CHARLES J. MacCARTHY, F.R.I.A.I., CITY ARCHITECT.



NEW MUNICIPAL TECHNICAL SCHOOLS, DUBLIN : GROUND FLOOR PLAN

strating the naval engagement with the utch at Solebay, however interesting istorically, are subjects totally unsuitble to tapestry; a point which should ever be overlooked in connection with the ubject. The best tapestry designs illusrated are the table carpet with a coat of rms in the centre, and a bold scroll borer; and the one of nude children at play nder a canopy of trees, the foliage of hich fills all the upper portion of the apestry in a very decorative manner. In onnection with an article on "Late sevententh century work at Drayton," some ery fine tables of the period are illusated.

The "Burlington Magazine" gives *in tenso* a valuable lecture delivered at xford by Herr Strzygowski on the inresting subject, "The origin of Christian rt." The main object of the lecture is to phold the thesis that early Christian art d its beginnings much more in Eastern an in Western sources; was more Byzantine than Roman. Considering the importance which is at present attached to the writings of Strzygowski as marking a new departure in our ideas of architectural history, it is rather amusing to find him honestly admitting that in the lectures of Sir Gilbert Scott he discovered that much the same idea had been suggested twenty years earlier than when he brought it forward, as he then believed, for the first time in 1901. He considers that a vigorous innovating force, totally opposed to the uniformity of ecclesiastical architecture in Rome, was making itself felt in ecclesiastical art as early as the time of Constantine. The new capital of this emperor was founded on the Bosphorus, he considers, in order to be near the marble quarries of Cyzicus, but the capitals sent from those quarries were quite different from the classic type of capital. Of course, we all know that; though we do not know why it should be assumed that the capitals were worked at Cyzicus; they may have been worked at Constantinople itself, the quarry merely supplying the material, which would rather alter the position of the argument. Mr. Newton Veitch, in an article on "English Spoons" (of which some charming examples are illustrated), seems to enter into rather unnecessary arguments to prove that spoons were generally made in sets, especially presentation spoons; surely that is a matter of course, without quoting Shakespeare for it. An article on Sheraton's work, by Mr. Cescinsky, is of some importance, as he shows that Sheraton's notions as to the actual construction of some of his lattice doors with oval tracery bars were very unpractical, and that he was more of a draughtsman than a maker. His designs on the whole were, however, better than those of Chippendale, whose excellent workmanship gives a value to designs which are often very frivolous in character. We quite agree with the remark that Robert Adam "did much to alter radically the trade of the cabinet-maker by his reckless disregard for the nature of the materials which had to be used in the making up of his designs." Those were not the days when the influence of material on design was recognised. In the mediæval period this perception was spontaneous and automatic; in recent days we have had to revive it as a principle to be kept in mind, and perhaps in time it may again become automatic.

The "Berliner-Architecturwelt" is entirely occupied with the description and illustrations of the new municipal Town Hall at Berlin, of which Herr Ludwig Hoffmann is the architect. We strongly recommend the illustrations of this building to the attention of English architects; it deserves to be called a rather remarkable design, containing many new ideas in the treatment of detail in a building which, while Classic in general style, has little about it of Classic conventionality. The plan is a very good one. The central cupola, though it is rather striking, is defective in design, being rather too high in proportion for its width, and consists of two storeys of equal height and almost identical in design, which is a weak kind of treatment for a tower. But there is a great deal about the detail of the building, both external and internal, which is interesting and original, and, as masonry design, has the merit of being quite masonic in style. There are many little bits of sculptured detail introduced in a rather unexpected manner, which form points of interest in a design which, as a whole, is dignified without being dull or commonplace, and is a great credit to its distinguished architect.

The general magazines present very little this month that bears upon art or architecture; but there is in the "National Review" one rather amusing article by "A post-impressionist scribbler" on what we gather to be some conventional decorative paintings enlivening the wall of a school-room at the Borough Polytechnic, and intended of course to raise and enlighten the minds of the pupils. The conclusion which the article is evidently intended to lead up to, though it is not expressed in so many words, is that representations of scenes and scenery reduced to the flat conventional style supposed to be proper for mural painting, not only do not appeal to the popular mind, but are the objects of a good deal of ridicule, in respect of their remarkable divergence from the appearance in real life. Some of the quoted comments of children and their parents, if actually true (we have our doubts on that head) are exceedingly amusing. It is evident that the lower orders, if they are to have pictures, want realism, and the motive for conventionalising scenes to suit them to mural painting is hidden from their minds. We do not think, however, that they would like "post-impressionist" art any better. But the article does suggest a consideration whether the kind of work that is produced for pictorial decoration in schools is exactly what is wanted.

The "Antiquary" publishes an article on "The Pastoral Staff and Archbishop's Cross-staff," which may be useful in teaching people that a pastoral staff is not a crozier, but something quite different, and that these two ensigns of ecclesiastical office belong to different dignitaries and are used in different ways. There is a good deal of popular confusion of mind on the subject.

IN PARLIAMENT.

(*By our Press Gallery Representative.*)

Housing of the Working Classes.

A Bill has been introduced in the House of Commons by Sir Arthur Griffith Boscawen to amend and add to the powers of the Local Government Board and those of local authorities under the Housing Acts. These Acts, the Memorandum sets forth, are already very complicated, and, until a consolidating enactment is passed, an amending Bill, drafted as it must be with reference to the existing Acts, cannot avoid adding to the complication.

The Bill adopts the principle of the existing Acts, especially those of the principal Act of 1890, and, apart from some minor alterations, aims only at the better enforcement of those principles. There is a general view among housing experts that, subject to minor alterations, existing legislation would be sufficient, if it were properly enforced.

The main alterations proposed with a view to enforcing the Acts are:—

(a) A special department of the Local Government Board is to be formed which will be employed exclusively in the supervision of the operations of local authorities under the Housing Acts. This department will co-ordinate the work of the various officers of the Board already employed in the work. It will assist local authorities by advice and information, and will annually make a special report to Parliament on housing matters.

Where a local authority is culpably neglecting its housing duties, the Local Government Board will be empowered, after application to the court, to execute slum clearances itself in place and at the cost of the local authority.

(b) In some areas the failure to deal with the slum evil and to carry out housing schemes under Part III. of the principal Act arises not from any unwillingness on the part of the local authority, but from financial difficulties. It is therefore proposed by the Bill to provide a parliamentary grant in aid of housing operations upon the analogy of the funds administered by the Road Board in aid of road improvement.

Various minor alterations of the existing Acts are proposed by the Bill which, it is believed, judging from practical experience gained in many areas, will greatly facilitate the exercise by local authorities of their housing functions.

The Bill is backed by Messrs. F. E. Smith, Astor, Barlow, Bathurst, Goulding, Guinness, Hills, H. Smith, Colonel Kyffin-Taylor, Earl Winterton, and Viscount Wolmer.

Architects of the Office of Works.

Mr. Noel Buxton, who has been interesting himself in the architectural department of the Office of Works, has called attention in the House of Commons to certain criticisms by Mr. Stokes, President of the R.I.B.A. The following questions and replies were printed in Friday's parliamentary papers:—

Mr. Noel Buxton—To ask the honourable Member for Southampton, as representing the First Commissioner of Works, whether his attention has been called to a recent address delivered by Mr. Stokes, the President of the Royal Institute of British Architects, in which he has expressed his dissatisfaction with the work done by the architectural staff of Hi Majesty's Office of Works; whether h will state the classes and the total number of architects employed in his department; and what number of them ar fellows, associates, or licentiates of th Royal Institute of British Architects.

Mr. Dudley Ward—The answer to th first part is in the affirmative.

There are two principal architects employed, both of whom are fellows of th Institute. In the next class, architect and surveyors, there are ten employed of whom six are associates and one licentiate of the Institute. The next clas consists of nineteen assistant architect and surveyors, of whom five are associate of the Institute. There are twenty-seve assistant architects and surveyors of th second class, of whom thirteen are associates of the Institute.

Since 1907, twenty-three architects an surveyors have been appointed, of whom thirteen are associates of the Royal Institute of British Architects.

Mr. Noel Buxton—To ask the honourable member for Southampton, as representing the First Commissioner of Works whether his attention has been drawn t the address delivered by Mr. Stokes, th President of the Royal Institute of Britis Architects, on the 6th November; whethe he will state the percentage which th cost of the architectural staff of His Majesty's Office of Works for salaries alon forms of the whole outlay; whether h will state what buildings have been entrusted to independent architects, not i the Office of Works, during the last sixteen years; and whether, in the interest of economy, he is prepared to conside the desirability of abolishing the architectural staff of the Office of Works and entrusting the work to independent architects.

Mr. Dudley Ward—The reply to th first paragraph is in the affirmative.

In reply to the second paragraph, th percentage which the cost of the architectural staff of His Majesty's Office o Works for salaries alone forms of th whole outlay is 3.34, and not 6¼ per cent. as stated.

In reply to the third paragraph, th following buildings have been entrusted t outside architects: 1, Government Offices Whitehall, southern building; 2, New War Office; 3, New Admiralty, Block III.; 4, New Admiralty, Block IV.; 5 Victoria and Albert Museum Extension 6, Royal College of Science, Imperial Institute Road; 7, British Museum Extension.

In reply to the last paragraph th answer is in the negative, although th First Commissioner will be prepared t consider any exceptional conditions whic might render it desirable in the future as in the past, to entrust certain specifi works to architects outside his department.

Varnished Woodwork at St. Stephen's.

Mr. Ponsonby asked Mr. Dudley War whether the process of cleaning an scraping the varnish off the oak panellin and carving which had been successfull carried out in the dining rooms and passages of the House of Commons would b continued, more especially in the Chamber itself.

Mr. Dudley Ward stated that this matter had not escaped the attention of th First Commissioner of Works, and th work was being carried out as opportunities and funds permitted.

Office of Works Architectural Assistants.

Mr. Dudley Ward informed Mr. Snowden that before any steps were taken to place any of the class termed architectural assistants engaged with the Office of Works on the established list, the desires of all who were so eligible would be ascertained, so that all of the class should have an opportunity if they so desired of being placed upon the established list. He also stated that the Treasury did not regard the technical certificate of the Board of Works Commissioners granted to each member of the architectural assistants as being equivalent to the certificate granted by the Civil Service Commissioners to the class engaged upon similar work and termed assistant architects. It was not intended to carry the same privileges of establishment, equivalent pay, superannuation and regular annual increment.

National Insurance Bill Passed.

The much-discussed National Insurance Bill received the Royal assent on Saturday last.

HOUSE AT KING'S STREET, KING'S LYNN.

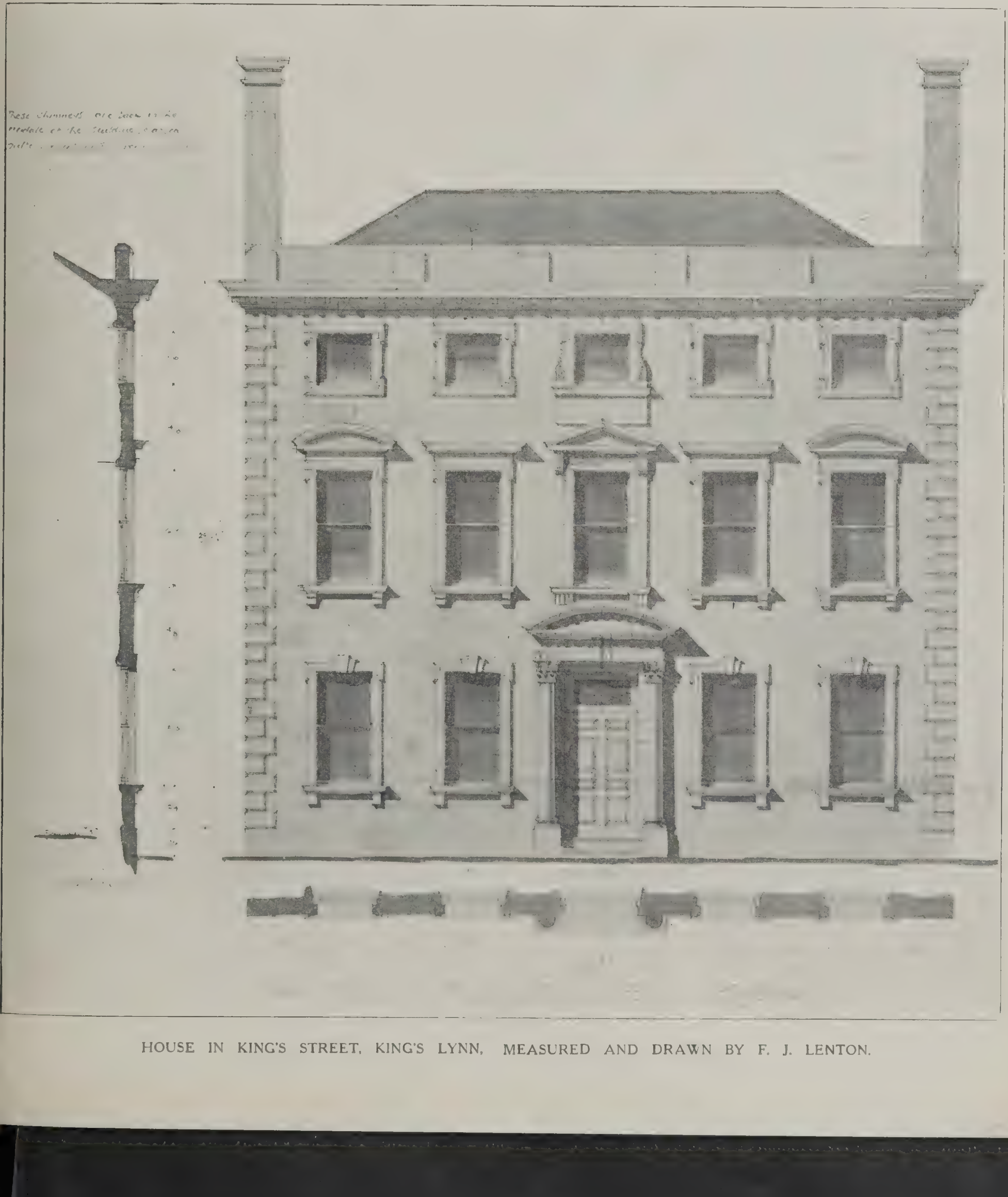
The façade of this house may be considered to be the work of Inigo Jones, as his name appears as architect in the old lease. The balustrade or parapet which originally crowned the front has disappeared, and only the base remains, capped by a modern saddle-back coping and lead. The loss of this feature is very noticeable in the general proportions of the façade. The drawings reproduced are by Mr. F. J. Lenton, of Stamford.

TESTING OF REINFORCED CONCRETE.

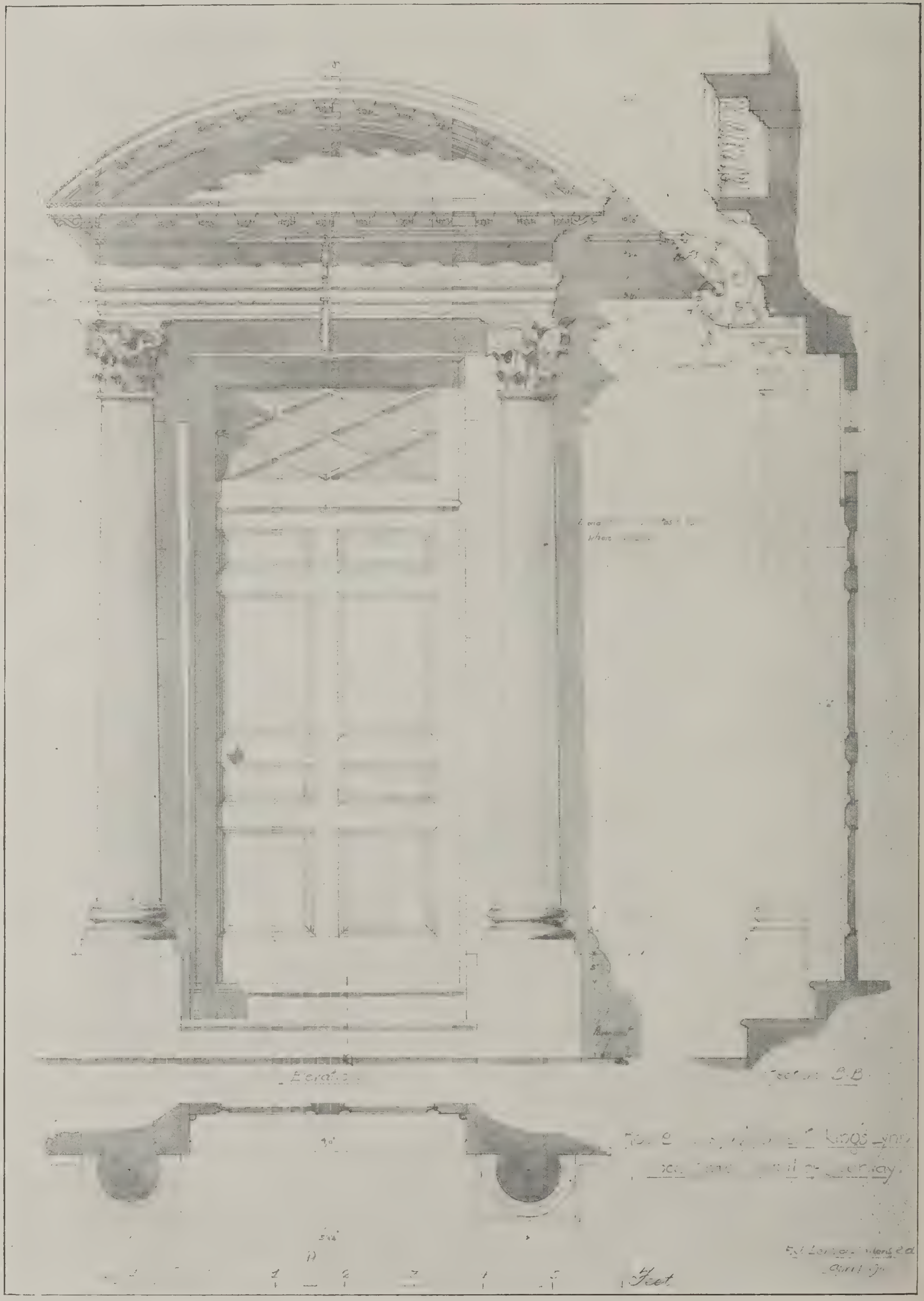
In connection with the series of lectures on reinforced concrete at the Westminister Technical Institute, noted in a recent issue, we are informed that arrangements have been made for casting and testing small beams with various proportions of tensile and shear reinforcements. The first set of three beams was cast in the course of a lecture, the aggregate being tested, proportioned, and mixed, the reinforcement placed in the forms and the latter filled and tamped. Samples of the cement used in each cast are retained for testing, and sample blocks of concrete cast for compression tests.

Similar beams will be cast at later dates to enable all the comparative tests for deflection and ultimate strength to be made at the concluding lectures upon beams of the same age.

The need of prompt and inexpensive laboratory tests on cement, aggregates, and concrete is daily becoming more pressing, and if facilities for such tests could be obtained at the Westminster and other Technical Institutes, users of reinforced concrete would benefit and the work of the students would gain enormously by seeing such tests made and recorded.


These chimneys are [illegible] to be
middle of the building [illegible]

HOUSE IN KING'S STREET, KING'S LYNN. MEASURED AND DRAWN BY F. J. LENTON.


Elevation
Section B.B
Feet

FIRE PREVENTION NOTES.

rigin of Fires, and Damage.

Once again we read, in a report of a great fire, "the origin of the fire is not definitely known, but is supposed to be due to the fusing of n electric wire." Naturally, when a deructive fire, or any other striking lamity, occurs, the first question that curs to the mind of the newspaper ader is, "How did it happen—what used it?" The newspaper reporter ows this, if he knows anything at all; d he knows also that it is part of his siness to answer this question and nother—honestly if he can, but at any te he feels bound to give some sort of swer. The other question is, "What is e amount of the damage?" In either se, the answer, it stands to reason, is sually the wildest guesswork. The rerter "investigates" and writes at exress speed, with two main objects in iew; the first being to get his matter ady for the press at the earliest possible oment, and the other being to give it the tmost possible importance that the cirmstances will allow; and as to the matr of damage, his professional instinct nds natually towards exaggeration. An xtra thousand pounds or so clapped on y a mere stroke of the pencil will hurt obody; it will not even scare the insurnce company officials, who are caseardened to a habit of exaggeration which agnifies their office; while the general ublic get their accustomed thrill, and do ot suffer any very serious shock of revulion when the true figures happen to be ade public, for by that time they have ompletely forgotten the original estiate, which of course varied with the ifferent newspapers.

Ignorance, heapness, and Expediency.

On the assumption, however, that "where there's smoke there's fire," the descriptive reporter may rhaps have some reasonable ground of cuse for his chronic recourse to "the sing of an electric wire," whatever that ay mean. In the early days of electric stallation, fires were no doubt freently caused by the crudeness of the iring, and it is from the recollection or adition of such occurrences that the rerter derives his modern instances—mewhat to the prejudice, it is to be ared, of up-to-date methods of wiring, hich are now so carefully adapted to e requirements of the insurance comnies, and embody the suggestions of so uch practical experience and scientific servation as to eliminate the risks that ere once common. Ignorance, the dere for cheapness, and certain dictates of pediency, still, however, give occasion an enormous amount of risk. Wiring often undertaken by people who really now very little about it; inferior firms pply at low rates materials of low rade; and certain owners—especially opkeepers, insist on arrangements that, ough otherwise well adapted for puroses of display, may be fraught with ntingent possibilities of disaster. Only hen the best advice is sought, and false conomy is avoided, can it be confidently ssumed that our old friend the "fused ire" cannot have had anything to do ith an outbreak of fire in a building in hich electric power or lighting is installed.

Periodical Inspection.

Another point that may be appropriately mentioned is one upon which we have repeatedly insisted with regard to the fire-reporter's favourite alternative of "a defective flue." Electric installations, like everything else, are subject to wear and tear and deterioration, and should be periodically and systematically examined by some thoroughly competent person. In the interests of the public safety, these inspections should be made by properly qualified public officials, so that the expense should not fall on the individual owner, but on the community who share in the benefits of it. It is not sufficient that a building inspector or other official is appointed to see that a new building is properly safeguarded, or that a new installation is as it should be. He should be required to visit premises with the object of pointing out—what is not always obvious to the owner or the user—the need for repairs and renewals. In this way many fire inquests would be avoided.

"Cause Unknown."

At the inquest held by Dr. F. J. Waldo, the City of London coroner, into the circumstances of a fire which occurred at midnight on Wednesday, November 22nd, at premises in the occupation of Messrs. Barclay and Sons, wholesale druggists, at Seacoal Lane, Farringdon Street, E.C., it was stated by the coroner that three other outbreaks in the premises had been reported to him as having occurred respectively on March 17, 1910, and on July 11, and August 26 of the present year. Four fires within so short a period is an exciting experience, and no doubt added keenness to the effort to discover their origin; but nothing very definite seems to have been determined about any of them, except that they occurred at the same place on certain dates. One witness thought that the fire in March, 1910, was due to the electric light, "which had been tested just previously by very high pressure." This gentleman, and two other witnesses, thought that the fire which was the subject of the inquest was caused by a spark from an engine on the railway. "The engines on some of the goods trains came up the incline belching all sorts of things," and a house-porter said that when he was cleaning the skylight hot ashes from the engines often fell on him. A superintendent of the salvage corps, however, attributed the fire to a match or other light being carelessly thrown down; which is a favourite theory of the profession, and is no doubt tenable in a vast number of instances, seeing how carelessly matches are thrown about. The jury returned a verdict to the effect that the cause of the fire was unknown, and so, with regard at least to that very important point, the enquiry was fruitless.

Locomotives and Lucifers.

It seems certain that railway engines and the careless use of matches are the two most prolific causes of outbreaks of fire in populous places. In neither case is what may be termed the primary remedy likely to be adopted. It ought not to be allowable for engines to go to and fro "belching all sorts of things" in the midst of all sorts of inflammable goods; many timber yards, varnish works, and other highly combustible collections, being situated close to the railway lines, whence, in the course of twenty-four hours, the engines emit enough sparks to fire a continent. There is certainly a *per contra* account; but it is no consolation to know that the railways frequently suffer severely from fires in buildings contiguous to them; as recorded in the accounts of the recent great fire at Kynoch's works, near Birmingham, where a signalbox was destroyed and the traffic was suspended. It is perhaps useless to urge that the railway companies ought to be prevented thus shedding potential destruction broadcast; and it would be equally futile to say that people ought not to throw down lighted matches. This primary remedy being at present denied us, we must fall back on what may be called secondary measures. It may be remarked in passing, however, that to fine a factory owner severely for allowing a little black smoke to escape, while a railway engine is allowed to throw out sparks and fire with impunity, is an anomaly that calls for earnest and immediate attention. In the meanwhile, every possible measure of protection should be adopted. Those skylights upon which hot cinders may fall should be of special glass, and framed in incombustible material; and not only the skylights, but all the other openings, should be, and could be, effectively protected, even when the building stands near some semi-volcanic railway or other source of danger. Then, as to interiors, there is only one way to secure more or less immunity against danger from the careless use of matches, and that is to see to it that all the floors and fittings are of incombustible materials. It may be argued, quite justly, that this might not be effectual against the ignition of inflammable goods; but here we arrive at a point at which material and moral forces may converge. It is possible to lay too much stress on either force, but the two in conjunction should be supremely effectual.

A Rational Arrangement.

In those parts of the premises where alone goods are stored, or are scattered about in the course of manufacture or of packing, strangers are not often admitted. It is therefore possible to enforce among all the persons who frequent those parts of the premises the strictest discipline, and to forbid and absolutely prevent the use of matches. Over the outsider there is no such control. You cannot snatch the cigar from his mouth, nor forbid him to light it on your premises; but you should not admit him to inflammable parts of the establishment, but only to apartments where no goods are stored, and where the smouldering cigar-ash or the unextinguished lucifer or fusee may fall on the floor with absolute impunity; but it would not be a bad idea, perhaps, to supply the public counter, or other likely fitment, with conspicuous ash-trays, which will at once represent an additional safeguard and a delicate attention to the visitor.

Cinematograph Safeguards.

The L.C.C. regulations as to cinematograph theatres are by this time pretty well known; but specific instances in which they are being applied are nevertheless instructive. For example, in granting a certificate upon a recent application, the Theatres and Music Halls Committee appended the following conditions:—(i) That the entrance corridor and lobby on the north side of the hall be not roofed over and be not used by persons awaiting admission to the hall; (ii.) that the ventilating trunks be constructed of fire-resisting materials; (iii.) that no door be hung so as to open over a step; (iv.) that the inner doorway to the office be fitted with a fire-resisting door and frame, and that the door be made self-closing; (v.) that the gates to the booking hall be of a satisfactory type, and if collapsible gates be fitted they be arranged without obstructing head and sill rails; (vi.) that gates be not fitted to the exit from the promenade at the south-east end of the building; (vii.) that the picture screen and all decorations in connection therewith be constructed of incombustible materials as distinct from materials rendered non-inflammable, and that the orchestra rail be arranged so as to prevent articles in the enclosure from projecting into the gangway; (viii.) that the approach to the operating enclosure, etc., be not formed where shown, and that suitable access thereto be provided from the open area at the south-west end of the building, and that a drawing showing compliance with this condition and the necessary re-arrangement in connection with the operating enclosure, rewinding room, etc., be submitted to the Council for approval; (ix.) that the store room at the south-east end of the building be permanently ventilated and the opening thereto fitted with a self-closing fire-resisting door; (x.) that the motor generator be completely enclosed in fire-resisting materials; (xi.) that safe and permanent access, adequately illuminated, be provided to the electric fans in the roof; (xii.) that a suitable room for the staff be provided in an approved position; (xiii.) that the Council's regulations as regards lighting, heating, seating, notices, fastenings, handrails, gas meter, small fire appliances and other matters of detail be complied with, and that details of the electrical, lighting, and heating installations be forwarded to the Council; (xiv.) that the sanitary and ventilating arrangements be to the satisfaction of the Council.

Hammersmith and Islington Fire Stations. The working drawings and the draft specification for the new fire-station to be erected on the existing site (with extension) of the existing Hammersmith station, having been prepared, quantities are to be taken out and lithographed at an estimated cost of £250. The estimated cost of the building is £13,000. For alterations that are to be made at the Islington Station, which include the rearrangement of some of the men's quarters, the formation of a side entrance passage, the provision of sliding poles, the formation of a new bathroom, and the placing of a wicket-gate in one of the appliance-room doors. Tenders for these works were invited from seven firms, and the resultant offers ranged from £595 to £786. Curiously enough, there were two at the former price, and the Council got over the difficulty by drawing lots, when the choice fell upon Messrs. Higgs and Hill, Ltd., of Crown Works, South Lambeth Road, S.W. This method of arriving at a decision makes an irresistible appeal to the sporting instinct. The tendering system itself is essentially somewhat of a lottery; and the interest of such competitions would be increased if, not only in the necessarily rare case of a tie, but when the tendering was very close, the offers that differed by only a few pounds were decided, not by selection, but by lot.

ALEXANDRIA: ITS PLACE IN ARCHITECTURAL HISTORY.*

BY G. A. T. MIDDLETON, A.R.I.B.A.

Alexandria has necessarily been the most important seaport of Egypt for many centuries, while it was for a considerable period one of the very greatest cities of the civilised world. Thus it was the natural meeting place of many influences, particularly at the time when Greek art was declining and the Roman scarce developed; yet not much is known of it, and the archæologist and the enquirer into the evolution of architectural forms had troubled little about what its ruins might have to tell; for, not once but several times, it has been ravaged and destroyed, and the remains of its former glories are comparatively few, and the actual dates of such fragments as have been discovered can by no means be determined with precision.

The Alexandria Museum.

Under such circumstances it is to the Museum that a visitor naturally turns first for enlightenment; to be met, to a certain extent but not entirely, by disappointment. It contains, it is true, numerous objects possessing both interest and beauty, arranged with considerable regard to artistic effect; but it is necessary to make one's own deductions from them. Of orderliness, in the scientific sense, there is little, for though here and there an attempt has been made to collect statuettes or architectural features into groups, there has been scarcely any effort to differentiate with regard either to probable date or to locality of discovery—in most cases probably unknown. The descriptions attached to the exhibits are silent on these points, having been obviously composed by one who was more enthusiastic as an art critic than as an archæologist, and consisting for the most part of eulogies in French upon the beauty of the object, its contour, modelling and colour, wholly valueless to one in search of knowledge and capable of judging of these things for himself. It is only possible, therefore, to accept the collection as being Alexandrian, and to apply knowledge acquired elsewhere to the double task of first producing some order out of the prevailing chaos, and then discovering in what way and to how great an extent Alexandrian architecture was influenced by what went before it, and how it afterwards influenced what was to come.

Architecture in the Catacombs.

The lessons learnt, if not many, are by no means insignificant, but before those of the Museum itself can be fully understood it is necessary to pay a visit to the principal Catacombs, which are under the control of the Museum authorities. The central chamber, reached by a spiral staircase from the surface, and cut in the solid rock, is said (on doubtful authority) to be the tomb of Caracalla and his wife. At any rate its entrance is flanked by indifferent statues of a Roman Emperor and Roman lady; but these are probably of later workmanship than the chamber itself, as are also certain obviously Roman sarcophagi and Roman urns. The architectural and sculptural embellishments of the room and its immediate approach are of the most mixed character imaginable; but they agree in their indications of date, and leave little doubt about the work having been done, most of it, about 200 B There are pilasters with lotus capit such as one would expect to find in purely Egyptian work at Philæ, execut in the Ptolemaic period; before the trance are two columns, with Egypti- entasis but capitals of mixed Greek a Egyptian character, having volutes su- as those of the well-known capitals of Choragic Monument of Lysicrates, Athens, springing, by no means incong ously, out of lotus buds and flowers stead of acanthus leaves; round the insi of the chamber there runs an ovolo mou ing enriched with the egg and tong carved in a manner which suggests l Greek workmanship; while the wall ca ings are of Assyrian or Babylonish ch acter, human figures with heads of bea or birds, executed in low relief, coarser execution than the wall slabs of Nimro palaces, because cut in a coarse-grain soft stone and not in alabaster, but ju as vigorous and a trifle more malignant expression. Then, in three places, ov large semicircular recesses, the shell nament appears, exactly as it is found Renaissance work in Italy. This is explicable, except upon the hypothe- that the ornament was common when catacombs were excavated (in other wor when Alexandria was at the zenith of glory); or alternatively upon the suppo- tion that this decoration is not ancient all, but fraudulently imitative work of European Renaissance period. The pr ability is that it is ancient, for while shell ornament is not to be found in museum, it contains examples which su- fice to indicate that the other archit tural embellishments of the catacom chamber, such as the carved capitals a the egg and tongue enrichment, were no means uncommon in Ptolemaic Ale- andria.

Greek Feeling.

Just as it is not surprising to find pure Egyptian characteristics in the orname of the Catacomb chamber, so is the pre ence of Greek feeling only what might expected. Essentially, Alexandria was Greek Colonial Settlement, if not at o time the greatest centre of Greek civiliz tion, and the Museum contains more arch tectural objects of Greek spirit, both design and execution, than almost a other in the world—all presumably loca Thus the Greek egg and tongue is a com mon enrichment. It is seen, for instanc on a few Ionic capitals, enriching th echinus in the usual way, while the abac is similarly enriched with the leaf a tongue, all sharply cut after the typic Greek manner, particularly that of somewhat late date, such as is found earliest in the Mausoleum at Halicarna sus (B.C. 350). The shallow character the volute also suggests late workma ship; it recalls that of the Nereid Mon ment from Lycia, now in the Britis Museum, which is generally considere to belong to the first century B.C. Th Alexandrian examples probably belong a period between these dates. So far a the multitude of examples may be taken indicate anything, however, they give th undoubted impression that the princip Greek work at Alexandria was of th Corinthian Order.

Greek Corinthian.

But the recognised examples of Gree "Corinthian" are extremely few. Th Choragic Monument of Lysicrates, ver small, has generally been considered th most typical, till the discovery of the beau tiful capitals of the internal Order of th

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*Extracts from a paper read before the Society of Architects on December 14th.

Tholos at Epidaurus. Both of these examples have tendril volutes springing from acanthus leaves, and so probably had the elliptical capital, of apparently late vorkmanship, which was brought from he temple of Diana, at Ephesus, and s now in the British Museum. As a rule, n the known Roman examples of Corin-hian capitals the tendril is stiffened and strengthened till it has more the appear-ance of a voluted leaf—so much so, that he gradual evolution from it, through Romanesque work, of the French "crochet" apital has been traced, in which the leaf s that of the hart's-tongue fern when artly open. Is it possible that Alexan-lria was the real home of the Corinthian)rder? and that the tendril volute was a nere local variation, beautiful but not es-ential to it? In the numerous examples n the Alexandrian Museum, the tendril olute is never found, but it is replaced by broad voluted leaf at the corners—hough tendrils are used for the caulicolæ. The capital in this form is exquisitely eautiful and structurally strong enough or employment on a large scale—and everal of the numerous examples are uite large; while the development from of the Roman form is natural and easy. 'ossibly the type persisted for a lengthy eriod, bridging the gap between the reek and Roman, for it is found in the hartoum Monument, recently compiled om ancient fragments, of which the capi-al is Greek (about 200 B.C.), and in the apital of Pompey's Pillar, known to have een erected in 302 A.D., which is Roman. ut in almost every instance both the eneral spirit and the workmanship are reek. On the other hand there is at east a possibility that the arch was known d used. One of the largest and most quisitely designed Corinthian capitals so contrived as to rest partially upon a micircular attached column, and partly the wall to which it was connected, hav-g a pilaster strip upon its flank. This is mpatible, perhaps, with trabeation, but uch more so with arcuation; yet in the sence of any further records of the ilding which this capital enriched, or en of where it was discovered, further eculation is vain.

Traces of the Romans.

Overlying the coral there is a softer ck, little better than compacted sand, ich forms a low cliff, nearly vertical, d against this as a backing there have en buildings in the Roman period, ex-nding out towards and in some cases to the sea. For a length of close upon mile there are constant evidences of this, e escarpment being in some places given facing of Roman tiles (or bricks), some-nes plastered on the surface, and some-nes of squared masonry; while in other aces cross walls of the same materials oject from the cliff towards the sea: and yet others, and much more frequently, coral bed has been worked in the solid o the shape of rooms with intervening lls, the present level of the floors being netimes below and sometimes above the ter level—which varies little, for there scarcely any tide. Some of these floors, erally those of small square rooms, plastered, and the plaster is carried the sides as high as the coral goes—ne eight or ten inches perhaps; but the lls once erected on these coral founda-ns have almost entirely vanished. Yet one notable instance at least a mass of ared masonry still exists, surmounted rubble, raised upon a tiny coral island e twenty yards from shore, but still easily reached by using as stepping stones the remains of the low coral walls of a series of intervening hollowed chambers, sunk but little below sea-level. When closely examined this masonry is found to be cemented by an exceedingly hard mortar, containing white marble chippings and crushed Roman brick. The presence of a lime kiln some two hundred yards inland from the cliff edge indicates where the lime may have been obtained from.

Most of these indications of a Roman settlement are fragmentary, and need careful surveying for their elucidation, but upon one of the promontories there is something more, the remains of what was obviously once an important building. Close to it, upon its north, there lies the Doric capital already referred to, having a diameter of twenty inches, and a little further North again is a broken drum of a column, the approximate diameter of which is twenty-two inches, of a beautiful blue marble veined with white.

Masses of Worked Granite.

On the other side of, and almost adjoining it to the south-east, half-submerged in water, are great masses of worked granite, having every appearance of being portions of an attached colossal statue of Ptolemaic Egyptian character. Casual inspection from the shore could determine no more than this, though one fragment looked as if it were reeded; a well-equipped party might spend some time in discovering more among the surf. So, too, it is with the building. It is worth close investigation.

Possibly Post-Roman.

There is a possibility, it must be admitted, that these remains (which can hardly be called ruins, being little more than rock-cut foundations) were of post-Roman origin, with the exception of the colossal statue already mentioned; for even after the fall of Rome, Alexandria retained a great amount of its importance, rivalling Constantinople for a considerable period as the centre of the Christian faith—as it still is the metropolis, if there be one, of the Coptic branch thereof. Thus the mere presence of Roman bricks regularly built up in walls, and of Roman masonry, can be taken as definite evidence only that the work was *not* carried out *before* the advent of the Romans. On the other hand, such evidence as there is of architectural work, during the period known as the Byzantine, is wholly to the effect that Alexandria was then, in an architectural sense, completely dominated by the great city on the Bosphorus.

Basket Capitals.

One capital in the Museum alone is indicative of Roman spirit. It is coarsely carved, a crude attempt at the Composite capital, as it might have been evolved from the typical Alexandrian capital, with voluted leaves at the angles, and its echinus has darts cut between the eggs instead of tongues. This, too, may indicate one of the many influences at work out of which Byzantine ornament was developed gradually That it was fully evolved at last, and used exactly as elsewhere, is shown beyond possibility of dispute by the fine basket capitals of typical form of which the Museum contains several examples, with all carved effect obtained by sinking the background below the retained general surface, and with panels worked on the principal faces of the capitals, as it were let into the basket work, and enriched with stiffly designed foliage.

But such work as this, architecturally perfect as it is, may well have been imported, in inspiration at least. That for which Alexandria stands alone is of earlier date and character, late Greek or early Roman as some might call it, but in greater truth Alexandrian, typified by a form of Corinthian capital practically unknown elsewhere, but common in the Egyptian port, as the numerous examples in the Museum indicate without doubt. It is, too, one of the most beautiful forms of capital known, beyond the beauty of that generally known as the Corinthian—with little evidence that it was ever used at Corinth—which it resembles in all respects except the use of leaf volutes at the angles in place of tendrils. Thus there surely is at least a doubt whether Alexandria was not the real home of the Order. If so, the name of Alexandrian should be given to it in place of Corinthian, and the Alexandrian form should be accepted as the general type. At least its recognition, and its use with such modifications as might be called for under individual circumstances, is fully justified in modern work which apes the Classic.

PICTURE EXHIBITIONS.

The Fine Art Society.

At the rooms of the Fine Art Society there are three exhibitions, two of which deal more or less with architectural subjects. The best is the collection of "Water-colours and etchings of Venice, Tuscany, and England," by Col. Goff, an amateur who paints and etches like an accomplished artist, and could have made a name for himself as such, apart from his military career. His etchings are well known in the exhibitions of the society of painter-etchers, and are generally among the best things there; his water-colours, which we have not seen before, are as good in their way as his etchings. They include both landscapes and city scenes, and in the latter the buildings are very well treated, for he is able to give architecture in correct and precise drawing, while avoiding the prosaic hardness which characterises the work of the mere architectural draughtsman. "The High Altar, Siena Cathedral," is an excellent example of this. Among the general views we were pleased with the bright aërial effect of "The Market Square, Nuremberg," "Rio San Marino, Venice," and "Zurich," a mere sketch, but a very effective one.

In Mr. Bernard Harrison's "Landscape and Cities of Northern Italy," the landscapes are the best things; the buildings are treated in a manner which has become rather a fashion with some water-colour artists of late, giving a texture of the buildings as if they were made of some soft and woolly material, instead of the hard texture of brick and stone. His drawing of "The Leaning Tower of Pisa, Moonlight," in which the lower stage of the leaning tower comes in as a foreground object, is very effective as a composition, but it would be more so if the masonry of the tower looked more like stone. Many of the landscapes are very good; "October Morning, Florence," for instance, and the interesting little picture of green grass and stream "Outside the City Gates, Pisa."

Mr. Warwick Goble's series of water-colours illustrate "Fairy Tales from the Pentamerone" (what is "The Pentamerone"?), and from a story called the "Green Willow." They contain a good deal of pretty and graceful fancy.

SHEFFIELD IMPROVEMENT PROJECTS.

Particulars of a scheme for overcoming the traffic difficulties in Blonk Street and Furnival Road, Sheffield, and for reorganising the Sheffield Markets, have been published in the "Sheffield Daily Telegraph."

The suggestion is that instead of making the new street straight through the Castle Hill site, it should be carried on a viaduct from the Haymarket to the station. This scheme would leave the whole of the Castle Hill site to be developed for market purposes, and would also provide, on the Viaduct level, a large handsome retail market, as well as a large square.

The street to the station would be similar in position to that recommended by the Improvement Committee. It would run from the Haymarket to Blonk Street, nearly in a direct line to the station, but instead of descending 26 ft. to Blonk Street and then ascending 20 ft. to the Station Yard, it would be carried on a Viaduct on the level of the Haymarket, over the land purchased by the Corporation, then by a bridge over Blonk Street (26 ft. high) and forward by a viaduct over the site of Smithfield Market to the Station Yard.

The advantages would be access to the station nearly on the level for trams, vehicles, and foot passengers, avoidance of serious delay and danger by cross traffic in Blonk Street, preservation of the surplus lands for large extensions of the markets (the viaduct being over the land and not cutting it in two pieces), utilisation of two and a half acres of land twice over, made possible by access from the viaduct at a high level, as well as access from the streets at a low level, and sundry other advantages named hereafter.

The slaughter houses would be removed and a new street be made along the side of the River Don, on a level from the bottom of Waingate to Blonk Street, connecting West Bar district, via Bridge Street, with the stations, and obviating the detour over Lady's Bridge.

The Wholesale Markets would have the floor level with Blonk Street, and be 25 ft. in height. The provision of a floor space comprising 13,960 yards would comprise the whole of the surplus lands, after covering in the whole of the River Sheaf, the closing of old streets and lanes, and the sale of three valuable corner plots. There would be a very long frontage to the River Don Street and to Blonk Street, and a short frontage to Exchange Street, and there would be an internal service cartway under the viaduct.

The Retail Market would be over the Wholesale Market, and on the level of the viaduct, and 25 ft. in height. It would cover 5,555 yards (more than the combined area of Norfolk and Fitzalan Markets), and there would be a complete circuit of 1,060 ft. in length, with six exits. The buildings would surround an open space as large as Fitzalan Square, with the station street passing down the centre, with bold balustraded parapets, and the buildings set back 40 ft. on each side; which, with uniform and bold architectural design, would be a notable forecourt at the entrance to the city. Externally the combined buildings would be very imposing in mass, and especially so as seen from the station and from the river. There would be staircases from market to market, and from the viaduct to Blonk Street.

The Smithfield Market would be considerably improved in rental value by being partially covered with the viaduct, and might also be advantageously developed by an upper market on the viaduct level.

The proposed markets would have floor space of four acres; the total floor space of the whole of the existing markets is only six acres. The project is that of Mr. E. M. Gibbs, F.R.I.B.A., who estimates the total cost of the viaduct scheme, land and buildings, at £398,000.

The Need for a Comprehensive Scheme.

A letter from Mr. C. D. Leng, published in the "Sheffield Daily Telegraph," advocating a big central improvement scheme for Sheffield, has aroused great interest among town planners. There is a general agreement that something ought to be done to relieve the difficulties of station approach and central street congestion from which Sheffield suffers as few other cities do, and it is also felt that any scheme that is carried out should be of a comprehensive character, planned with an eye to the future, and not a patchy affair dealing merely with a local problem.

This view was strongly put forward by Mr. J. B. Mitchell-Withers, the President of the Sheffield Society of Architects and Surveyors, in an interview with a representative of our Sheffield contemporary.

"I think," he is reported as having said, "it is very desirable to deal with the improvement of the centre of the city as a whole. At present, there is no doubt that the condition of things is very bad, especially with regard to the stations. We have no good approach to either the Victoria or the Midland, and they are both very poorly placed for a city of the size of Sheffield. We want a good through artery from the centre of Sheffield to the Victoria Station."

As an illustration of the unsatisfactory manner in which street improvements have been carried out in the past, Mr. Mitchell-Withers produced a plan dated 1875, showing a scheme for the construction of Pinstone Street, the widening of Fargate, High Street, and Church Street. It was only partly carried out at that time. Pinstone Street was made during the next few years, and Church Street was widened. Fargate was begun, and then stopped. Then it was taken in hand again and stopped once more. The High Street scheme was not carried out for some 15 years, by which time it had become much more costly than it would have been originally. "And even then," he added, "when they had done with High Street it did not form part of any city plan."

The same kind of thing had taken place with regard to Fitzalan Square. There was no doubt that it would be better to have more open spaces in the centre of the city, although there were difficulties of gradient and shape to contend with. But he complained that the present Square had been "tinkered about" with, in one way or another, without relation to any definite scheme. A matter of that sort should be considered fully, and not carried out bit by bit.

Change of Address.

Mr. W. L. Lucas, architect, is removing from 6, The Sanctuary, to new offices 9, Great George Street, Westminster.

WREN AND HAMPTON COUR
PALACE.

Mr. Cloudesley S. Willis, in the cour
of an able and interesting paper re
at Ewell, said that Hampton Court w
built according to the fashionable plan
the age, with a great gatehouse leadi
into a court, round which were rang
the lodgings for guests, a kitchen, a ha
and a chapel, and, in a great house su
as this, or Nonsuch, an inner court, whe
were the principal lodgings for the own
and distinguished guests. The rule
the Middle Ages was to build like on
fellows. The owner would be influenc
by his tastes and the exigencies of situ
tion and available material; but havi
decided upon the general plan, the desi
would be arranged by the master of t
works, here called James Bettes, and t
details would be carried out by the mas
mason and master carpenter, accordi
to their traditional knowledge and
perience.

For the building of the hall there w
payments for candles for the workm
paving it with tiles, and for their wo
ing in "their hour times and drinki
times." Such was the haste that
master mason had a commission to arr
freemasons and compel them to wo
It was interesting to note the paymer
which included "10,000 of bryke at 4s.
the thousand of hym bought and delyv
at Taplow quarry; payd to John Chur
of Chertsey, for a 1,000 pavying t
servying for the Kynges New Hall,
hym bought and delyverd at Hamp
Court—18s. 4d.; payd to Galyon Ho
the Kinge's Glasiar, for glasying
haull—5d. the fote; Robt. Burdges,
Hampton, bryklayer, for 12 chim
shaftes uppon the Queny's new lodg
at 45s. the piece." These moulded br
chimneys were a special glory of Ha
ton Court. The Tudor brickwork
Hampton Court was laid in white mor
How the old white joints gave the w
light and colour, whilst the modern bl
pointing destroyed the variety of
bricks, and killed the dark brickw
patterns, might be seen by comparing
present dismal face of the Base Co
with those parts where the white mo
remains, and the old brickwork
glowed with colour, ranging from li
red to purple. Fortunately, pointing
but skin deep, and if it were renew
as occasion arose, with white mor
Hampton Court would in time resume
wonted appearance.

On the accession of William and M
these began to build the State apartm
in the mixture of the styles of Louis X
and of the Dutch, that was distinctiv
Christopher Wren's architecture. T
Wren ever laid hands on Hampton C
was a misfortune only mitigated by
facts that he used red bricks and stone
great skill to correspond with the ol
work, and that, excepting the colonn
and the south front, the two styles
not appear in the same parts of the bu
ing. Wren's salary was 4s. 10d. a
and £80 a year as Surveyor-General
their Majesties' works. Wren remai
surveyor until George II.'s reign, w
he was dismissed, and retired to a h
on the Green, where he died.

[Has the former blind worship of W
brought about at length the inevitable
action? When, in its turn, dispraise of
has run its course, we may get
reasoned view of him.]

RCHITECTURAL ASSOCIATION OF IRELAND.

At a general meeting of the above so-
ty, held in the lecture hall at 15, South
ederick Lane, Dublin, the President,
. Page L. Dickenson, M.R.I.A., occu-
d the chair, and a large number of
mbers and friends were present. Mr.
H. Ashworth, F.R.I.A.I., congratu-
ed the Association on the favourable
ture of the report and the prosperous
tlook for the present session.

Two new members were elected—Mr.
. A. Dixon and Mr. C. D. B. Ward.
ofessor Scott, M.R.I.A.I., then read a
st interesting paper on Byzantine Ar-
tecture, illustrated by numerous lan-
n views of the principal mosques and
aces in Constantinople and Ravenna.
e lecturer dwelt on the similarity exist-
between certain mouldings and details
nd in Byzantine work and those in
ly Irish architecture.

n proposing the vote of thanks to Pro-
sor Scott, at the conclusion of the lec-
e, Mr. P. J. Lynch, M.R.I.A.I., laid
ess on the fact that a careful study and
le knowledge of Byzantine architecture
s a necessary prelude to the study of
sh architecture. Mr. Lynch deplored
fact that so little attention had been
d in the past to this subject, and urged
members of the Royal Institute and
Association to band themselves to-
her to form a renaissance in Irish
architecture to carry on the work so well begun in a bygone age.

Mr. O'Brien Smith briefly seconded the vote of thanks to Professor Scott. In putting the motion, which was carried with acclamation, to the meeting, the President, on behalf of the Association, sincerely congratulated Professor Scott on his recent appointment to the Chair of Architecture at the National University.

A notice of motion to be put to the next meeting was read, having for its object a reduction in the number of members required to form a quorum at special meetings.

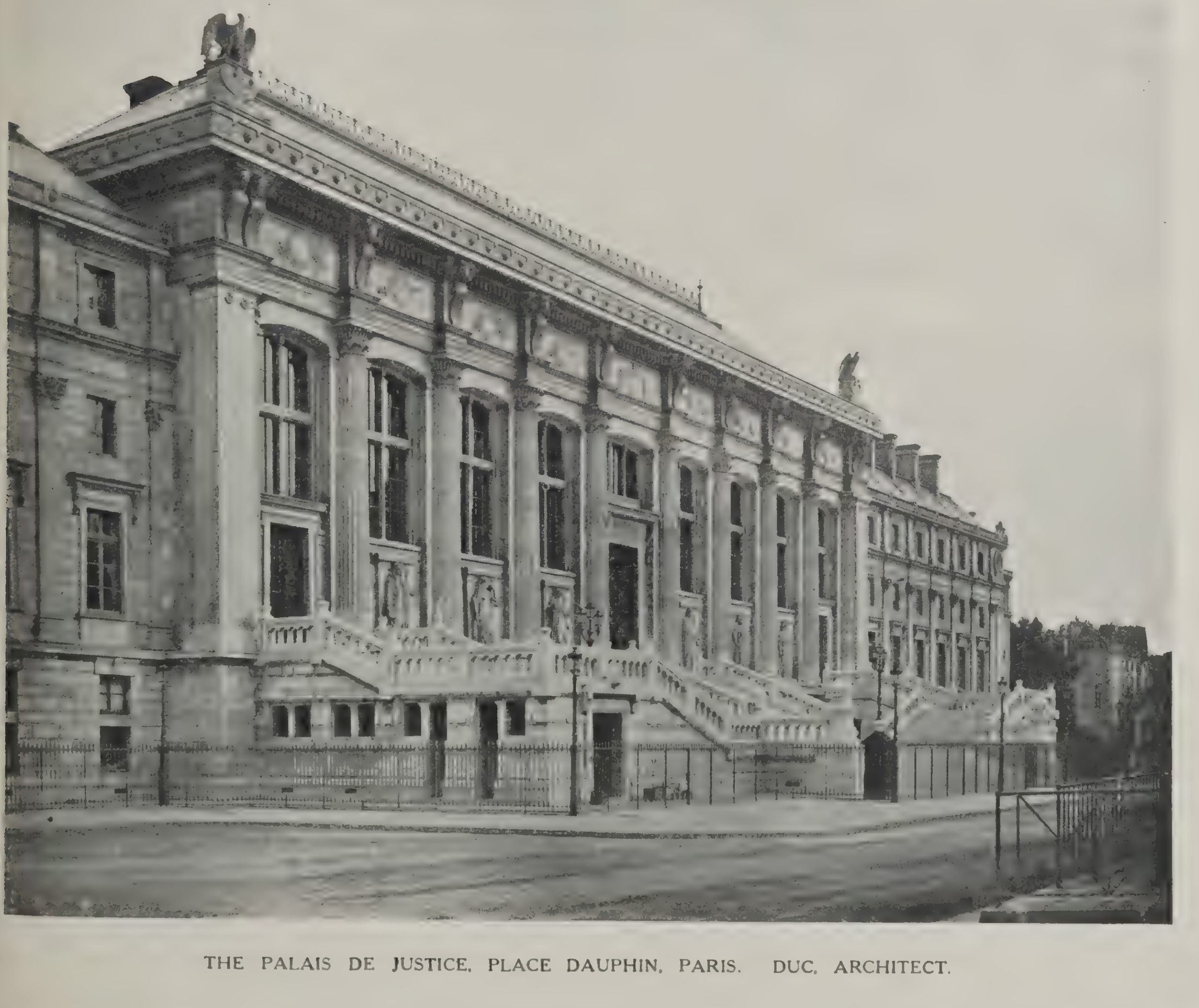
ROYAL INSTITUTE OF ARCHITECTS OF IRELAND.

An ordinary meeting of the Council of the Royal Institute of the Architects of Ireland was held at No. 31, South Federick Street, Dublin, last week, the President, Mr. J. E. Murray, R.H.A., F.R.I.B.A., in the chair. Mr Ashlin proposed a resolution of condolence with the relatives of the late Mr James Rawson Carroll, fellow of the Institute, and for many years a member of Council. The draft report of Council for 1910 was read, amended, and adopted.

It was resolved to nominate Mr. W. H. Lynn, R.H.A., architect, of Belfast, as a fit and proper recipient of the Royal Gold Medal for 1912, in recognition of his long and distinguished services to architecture.

OUR PLATE.

The Palais de Justice, in the Place Dauphin, Paris, as remodelled by Duc, may be said, in a sense, to mark an epoch in architectural history. It was designed at a time when architects were growing impatient of the severity of Classical traditions, and were feeling their way towards the greater freedom of expression which, while preserving the distinctive characteristics of Greek art, broke away from its absolute forms, and gave greater play to individuality of treatment in the details. The Palais de Justice is by some thought to have reached the zenith of the neo-Classic feeling; and Mr. Phené Spiers has been quoted in support of the opinion that this building is one of the best of modern Classic works. Its influence has been potent and far-reaching. It has inspired the design of many important buildings at home and abroad; and that it should have been occasionally regarded as a model rather than as an inspiration was perhaps inevitable. It has been said by a recent writer that certain mighty men, like Inigo Jones and Wren, have been "academies in themselves," and perhaps this may be predicated with even more force of such prepotent buildings as the Palais de Justice, of which a view is given below, while an enlarged detail forms the subject of our centre plate. At the present moment, when neo-Classicism is so rapidly growing in favour, and is finding much powerful advocacy, these illustrations may be said to possess a timely interest.



THE PALAIS DE JUSTICE, PLACE DAUPHIN, PARIS. DUC, ARCHITECT.

OBSTRUCTIVE BY-LAWS AND INFLAMMABLE BUILDINGS.

It was pointed out by Mr. Humphrey, in his lecture which we printed a month ago, that while America was commonly, and no doubt justly, regarded as being far ahead of other countries in fireproofing construction, this superiority was not general. This statement is indirectly confirmed by some observations published by Mr. Ernest Flagg, the American architect, in the course of his communication on the economy of fire-resisting construction, from which extracts were given on p. 539 of our issue of November 22nd.

Mr. Flagg finds it necessary to restate the truism that the interests of a city require that fireproof construction should be made easy, and dangerous construction difficult. The Manhattan law accomplishes the reverse of this. All sorts of burdensome requirements are imposed on the builder of fireproof tenements, while a highly dangerous licence is allowed to the builder of inflammable ones. The user of steel and iron must protect his material at all points with a covering of brick, terra-cotta, or other similar substance, while the user of wood may leave his more dangerous material exposed. Even metal columns used to support floors in non-fireproof buildings may be left exposed. Thus in buildings where there is much to burn, the law provides no protection for the metal, but in fireproof buildings, where there is presumably little to burn, it imposes a protective covering.

Semi-Fireproof Buildings.

Many of our so-called fireproof buildings contain such quantities of wood that they should really be classed as only semi-fireproof; but the law makes no distinction between such buildings and others which contain no wood at all. In both alike all structural metal must be covered. At least three-fifths of the wood used in what we generally call fireproof buildings lies in the double wooden floors and the wooden sleepers to which they are fastened. In buildings which do not have wooden floors there is no reason why the ironwork should be protected, except in special cases. It stands to reason that where wooden beams are used which can burn, the brick walls which support them should be thicker than where metal beams are used which cannot burn; but the law makes no such distinction.

What can be said for a wall 50 ft. high and only 1 ft. thick, having wooden beams at each storey built 4 in. into it—often on both sides—and still further weakened by chases, flues, windows and doors? Walls of this sort could hardly stand alone for a moment, and are only held upright by the inflammable beams which they support. This is bad enough; but under certain conditions the law allows walls supporting wooden beams which are only 8 in. thick for a height of 40 ft.

Enormous Fireproof Buildings.

It goes without saying that walls of this sort can offer but a feeble resistance to the spread of fire. Is it any wonder that with such laws in force in our principal city the yearly fire loss in this country [U.S.A.] equals one-half the cost of new construction? It is perfectly safe to say that for an additional cost of 10 per cent. spent on thicker walls and more solid construction in other parts our yearly fire loss might be reduced by one-half, and even then it would be far greater than is usual in other countries.

One who compares the Manhattan building law with the building laws of other cities can hardly escape the conclusion that it was drawn for the express purpose of discouraging the use of fireproof construction, so burdensome are its requirements.

Even in Brooklyn concrete construction is about 25 per cent. cheaper than it is in Manhattan, because the requirements in that borough are not so rigorous as they are here; though just why stresses which are considered safe in Brooklyn should be considered unsafe by the same government on the other side of the river does not appear.

I might greatly prolong this, but enough has been said, I should think, to show what great disadvantages the person who wants to build well in this city is placed.

Who benefits by all this useless waste of material? The money it costs is worse than thrown away. It serves no other purpose than to check the use of fireproof material, and to increase the fire risks of the city.

If under the present adverse conditions fireproof tenements can be built, as the building described by Mr. Flagg in the article mentioned above undoubtedly shows they can, to compete commercially with non-fireproof ones, Mr. Flagg thinks that this is a matter of great importance; for, he says, nothing is more sure than that every piece of wood which can be eliminated from our buildings is a distinct gain to the safety of the city.

ARCHITECTS AND FIRE RISKS.

The New York chapter of the American Institute of Architects have submitted a report to the New York Board of Fire Underwriters, proposing that in the future the name of the architect be included by the board when supplying information concerning the character and risk of a building. Also that mention be made of whether or not the architect drawing the plans of the structure supervised its construction.

Architects say that they would very much like to have the Board of Fire Underwriters adopt the suggestion, inasmuch as the plan proposed would help them in their profession. It would aid, they say, in preventing the placing of construction work in the hands of unreliable contractors who do not always strictly adhere to the specifications prescribed by the architects. The purpose of the plan is to make the architects take a greater interest in the work of construction, and in view of the fact that their names would be mentioned in each report of the Board of Underwriters, they would make it a point to have all buildings erected from their plans above criticism.

HOLYHEAD BREAKWATER REPAIRING SCHEME.

The large amount of preliminary work entered upon last August, in connection with the replacing of wastage in the rubble mound on the breakwater at Holyhead, has been almost completed, and shortly the work of conveying the stone from the quarries to the breakwater and depositing it on the rubble mound will be begun. The breakwater, completed in 1873, after close upon thirty years of construction, has withstood very severe storms. Owing to the gradual lowering of the foreshore by constant wave action and attrition, the Board of Trade, acting upon the advice of their engineers, decided early this year to restore the rubble mount to half-tide level.

Several contractors experienced in h
bour work were invited to tender for
work, the successful firm being Messrs
Pearson and Son., Ltd., Victoria Str
Westminster.

Six Ingersoll-Rand drills, driven
compressed air, will be used for qua
ing the rock. The air, compressed
100lbs.. per square inch, will be conve
to the drills by a wrought iron main. Th
are already two 10-ton steam cranes,
one of five tons on the works, which
be used for lifting the stones after t
have been quarried into the ten-ton sk
These skips are being constructed in
old Government workshops, near
breakwater, by local workmen. A num
of "bogies" are being built in the sa
workshops, and these will each carry
of the skips full of stones, and, when m
up into trains of eight "bogies," will
hauled to the breakwater by the lo
motives.

The stone depositing at the breakw
will be accomplished by a thirty-ton st
crane, having a radius of 60 ft., wh
will lift each skip in turn off its
"bogie," and lower it down over the
side of the breakwater, where its cont
will be tipped on to the rubble mou
It is hoped by this means to deposit f
600 to 800 tons of stone a day. The T
will travel along the breakwater unde
own steam, and each night will be ru
a place of shelter. It is propose
deposit about 100,000 tons of stone, an
obtain this quantity of large stones i
estimated that over 150,000 tons will r
to be quarried. All the stone before b
deposited will be weighed on a twenty
weigh-bridge, which has been erected,
which all the waggons will pass.

The contract has to be completed
January 31st, 1913, the amount sancti
by Parliament to be expended on
works being £54,000. The repairs
being carried out by Messrs. Hawks
and Dobson, of Westminster, loc
supervised by Mr. F. M. Cotton, M.I
C.E., the resident engineer, the cont
tor's engineer being Mr. H. E. Spence

LONDON'S NEWEST THEATR

The latest addition to the ever-grow
list of London playhouses is to be ope
to the public on Boxing Day. Me
Walter and Frederick Melville are its
prietors and managers, and they have
decided to christen the handsome bu
ing, which stands at the top of Sha
bury Avenue, the New Princes Thea
The house holds some 2,500 persons,
the decorations are in excellent taste,
dued rather than garish, the colour sch
being in cream and gold, to which
agreeable contrast is offered by hang
and carpets in crimson. There is a
ing roof for use during the sum
months, while the ceiling is adorned
a series of allegorical figures. Mr. Be
Crewe is the architect.

The stage is fully adequate to
mounting of the heaviest productions.
is 75 ft. wide from wall to wall, posse
a depth of 35 ft., and a proscenium o
ing of 32 ft. The supply of dressing-ro
is equal to all requirements, and t
have been fitted with all modern ap
ances. The Plenum system of ventila
has been adopted, by means of whic
current of hot or cold air can be turne
at will. A special feature of the new h
is a fireproof property-room, situ
under the stage, in which accessories
be stored. A new system of stage bri
has also been introduced, facilitating
greatly enhancing the effect of buil
scenes.

COMPETITION NOTES.

Cardiff Technical Institute.

The premiated designs in this competi- n are announced in the following ler: 1, Messrs. Ivor Jones and Percy omas, Cardiff; 2, Messrs. Cooper and ter, Blackburn; 3, Mr. J. Myrtle Smith, ndon; 4, Messrs. Spalding and Myers, d Ernest G. Theakston, joint architects, ndon. The designs will remain on ex- ition at the City Hall, Cardiff, until day next.

Wellington Cottage Hospital.

t is announced that the winner in this npetition is Mr. Leslie T. Moore, R.I.B.A., of London.

Voodseats Methodist Church, Sheffield.

essrs. George Baines and Son, of ndon, have been awarded the first place this limited competition.

Knavesmire Council School.

t a recent meeting of York City Coun- Councillor W. Birch, in accord- e with notice, moved the following re- ution: "That this Council instructs the ucation Committee to so amend their ditions of competition in connection h the erection of the Knavesmire Coun- Schools that members of the Royal In- ute of British Architects may be en- ed to compete; and that all minutes resolutions of the committee and the incil to the contrary or inimical to resolution be rescinded." In propos- the resolution, Councillor Birch vigor- ly criticised the conditions, saying it proposed to pay the architect only 4 cent., which would debar the principal hitects of York from taking part in the npetition. If they allowed 5 per cent. se architects would be enabled to com- . There were 25 architects in York were either Fellows, Associates, or entiates of the Royal Institute of ish Architects, and under the proposed ditions there were only six men in the who would compete. Was it worth le debarring York's best men from peting to save £100? Alderman er, seconding the motion, said the ncil had decided to pay the standing of wages, and the standing rate of es for architects in York was 5 per ., which was not too much. Coun- r J. T. Clarke said the Council unani- isly agreed that the competition should thrown open to the architects of the , and he was astounded to hear such litions had been imposed. The Sheriff that as the rate seemed to be 5 per . he was prepared to agree to it. But would point out that a neighbouring got its schools built at a commission per cent., plus the amount that was ed by the architect in taking out quan- s. It should also be remembered that 10,000 job was not like a £500 job, the building of a school was different many cases from the building of a pri- house. Councillor Rhodes Brown ght that if other towns could do this at 4 per cent. it could be done in York like amount. Councillor Sharp hav- supported the resolution, Alderman ay said the Education Committee had endeavouring to remove the sugges- that they were an extravagant com- e. Councillor W. Birch: If that is nly way in which the Education Com- e can save money I say don't make more attempts. He added that the llesbrough Public Library, which cost £16,000, was built on a 5 per cent. basis. The resolution was adopted by 34 votes to 2, three members remaining neutral.

LIST OF COMPETITIONS OPEN.

DECEMBER 30. WORKMEN'S DWELLINGS.—At the Eisteddfod, 1912, a prize of £50 will be offered for designs for workmen's dwellings. Apply to Welsh Housing Association, 9, Temple Chambers, E.C.

JAN. 1, 1912. INFIRMARY EXTENSION, ROCHDALE.—The Board of Management of the Rochdale Infirmary invite architects practising in Rochdale prior to January 1st, 1911, to submit plans, designs, and estimates for extending the present buildings. Conditions of competition and instructions to architects, together with other information can be obtained on application to T. Elvyn Kershaw, Secretary, the Infirmary, Rochdale. Mr. Alexander Graham, F.R.I.B.A., has been appointed assessor.

JANUARY 6, 1912. PUBLIC LIBRARY, STAFFORD.—The actual building is not to cost more than £4,000. Enquiries were to be sent to the Town Clerk, Stafford, not later than November 25, and designs must be sent in by January 6. The Borough Engineer states that applicants for particulars should have enclosed £1 deposit. Mr. Henry T. Hare, F.R.I.B.A., is assessor.

JAN. 6, 1912. CENTRAL HALL, OFFICES, AND CARETAKER'S HOUSE, BOLTON.—The Lancashire and Cheshire Miners' Federation invite architects in practice on their own account within a radius of 25 miles of the Town Hall, Bolton, to submit designs in competition for the above. The Committee of the Federation have appointed as assessor Mr. Jonathan Simpson, F.R.I.B.A., of Bolton. The premiums offered are £50 and £25 for the two best designs in order of merit as adjudged by the assessor. Conditions and instructions will be sent to architects on application to Messrs. Fielding and Fernihough, Solicitors, 7, Fold Street, Bolton, accompanied by a deposit of one guinea (which is returnable on fulfilment of conditions).

JANUARY 8, 1912. WORKMEN'S DWELLINGS, BANBURY.—The Town Council of Banbury invite designs for workmen's dwellings. Applications for particulars (to be accompanied by a deposit of 10s., returnable on usual terms) to be sent not later than January 8 to Arthur Stockton, Town Clerk, Town Hall, Banbury.

JANUARY 9, 1912. PUBLIC HALL, SPENNYMOOR.—Competitive designs are invited by the Spennymoor U.D.C. for a public hall, market, and offices. Premiums, £50, £25, and £10, first premium to merge in commission. Particulars (deposit £2 2s., returnable on usual conditions) from F. Badcock, Clerk to the Council, 3, James Street, Spennymoor.

JANUARY 9. TECHNICAL SCHOOL, MAGHERAFELT.—The Magherafelt Technical Instruction Committee invite competitive designs for a technical school proposed to be erected in Magherafelt, the total expenditure, including provision of sewerage and water supply, not to exceed £1,200. The successful competitor will supervise work and be paid a commission of 5 per cent. on the building contract sum. Designs, bearing only a nom de plume, and accompanied by a sealed envelope containing competitor's name and address, to be delivered on or before 9th January, 1912, to William D. Cousins, County Technical Office, Courthouse, Coleraine.

JANUARY 20, 1912. STATUE AT HAVANA.—Competition instituted by the Cuban Government for the erection at Havana of an equestrian statue of the Cuban General Maceo. Plaster models should be sent by sculptors desirous of competing to the "Comisión Ejecutiva, Monumento al General Antonio Maceo, Secretaria de Instrucción Pública y Bellas Artes," Havana, before January 20. The sum of 100,000 pesos (about £20,600) has been voted for the work. British sculptors proposing to compete should first put themselves into communication with the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., where also further particulars (in Spanish) may be seen.

JANUARY 29, 1912. GOVERNMENT PALACE, MONTEVIDEO.—Designs are invited for a Government Palace and a town improvement scheme. Premiums: For the former, £2,125, and £850; for the latter, £1,060, £640, and £425. Conditions, etc., at the Board of Trade, 73, Basinghall Street, E.C.

JANUARY 31, 1912. FEDERAL CAPITAL CITY, AUSTRALIA.—Competitive designs are invited by the Commonwealth of Australia, for the laying-out of the Federal Capital City. Premiums are offered as follows: 1st, £1,750; 2nd, £750; 3rd, £500. Conditions, together with particulars, plans, and instructions, may be obtained at the office of the High Commissioner for Australia, London. Designs must be delivered by January 31st, 1912, to King O'Malley, Minister of State for Home Affairs, Commonwealth of Australia.

[The Institute of Architects of New South Wales and the R.I.B.A. have asked members and Licentiates not to take part in this competition unless the conditions are made more satisfactory. See our issue for November 8, p. 485, and article printed in the issue of November 22nd, p. 537.]

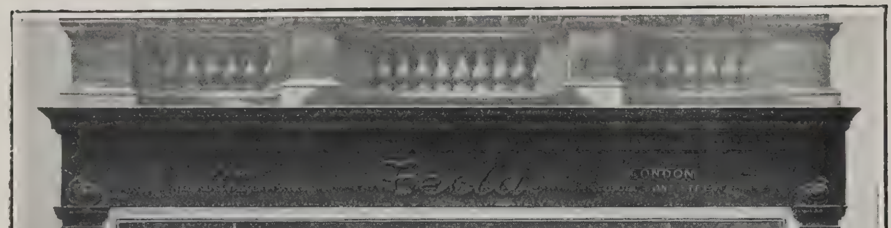
FEBRUARY 3, 1912. NURSES' HOME, BOLTON INFIRMARY.—Premiums, £30, £20, and £10. Mr. John B. Gass, F.R.I.B.A., has been appointed the assessor.

FEBRUARY 17, 1912. NEW OFFICES FOR THE PORT OF LONDON.—The Port of London Authority invite preliminary sketch designs for new head offices in Trinity Square, and for lay-out of a building site. Sir Aston Webb, R.A., is the assessor.

JULY 1, 1912. CITY EXTENSION SCHEME, DUSSELDORF. — Premiums £1,000 **and** £375. Particulars from the Chief Burgomaster, Dusseldorf.

CARPENTERS' COMPANY AWARDS.

The following list of candidates successfully passed the Company's examination in Sanitary Building Construction held recently: Gold medal and Clerks of Works Association prize of five guineas, Thos. J. Welsh; silver medal and certificate, L. S. R. Hart; bronze medal and certificate, L. Barnard, F. Boxall, Wm. Clarke, H. J. Hollands, A. C. Huffell, George Priestley, and G. E. Vincent; certificates, J. M. Brown, R. F. Bryer, G. E. Burr, C. E. Evans, J. E. Fell, A. E. France, W. E. Hall, J. W. Judson, and A. Mitchell. It is interesting to note that a large proportion of the candidates came from the provinces.



SHOP FRONT, NO. 30, OLD BOND STREET.

SHOP FRONT, NO. 30, OLD BOND STREET

The shop front here shown was executed in Italian walnut, with Pentelicon marble riser, for Messrs. Tecla, of Paris, by Messrs. Stanley Jones and Co., Ltd., shopfitters, of 8, Gray's Inn Road, Holborn, W.C.; who have a model freehold factory at Shepherd's Bush. Our illustration is reduced from a photographic view which is included in a brochure showing several other elegant fronts and interiors executed by this firm. These comprise Messrs. W. H. Smith and Son's bookshop at Kingsway; the millinery department at Messrs. Bobby and Co.'s, Eastbourne; fittings in the juvenile outfitting department at Messrs. Fredk. Gorringe's, in Buckingham Palace Road, W.; bronze shop fronts on the "arcade and island showcase principle," for Messrs. Warings, Ltd., Oxford Street, W.; shop-front for Messrs. Bobby and Co., Ltd., milliners and costumiers, Margate; shop-front for Miele and Co., in Amsterdam; interior fittings for the same firm in Antwerp; front for the London Boot Co., in Oxford Street; metal shop-front, with marble risers, pilaster, and fascia, for Messrs. Terisa, of Paris; fronts for B. B. Evans and Company, Kilburn, N.W.; and fronts for Walter Shead, Holborn, E.C., in the block of Elizabethan half-timber buildings near Staple Inn. The booklet shows a wide range of designs, materials, and service; but throughout the diversity there is always observed a high standard of artistic taste.

NEWS ITEMS.

Central Halls in Schools.

At a meeting of Swansea Schools Building Committee recently (Ald. Ben Thomas presiding), the schools architect (Mr. Laurence) produced plans for Brynmill Infants' School, to cost £6,900, and for Cwmbwrla Schools to cost £13,700. In the plans were provided a central hall and a marching corridor. Councillor Colwill took exception to the provision of both hall and corridor on the score of expense. Mr. Laurence said the Board of Education insisted on an assembly hall; and in the way which he had planned it, with proper ventilation, the Board would offer no objection to its being used as class-rooms in the case of crowding. If they simply had the marching corridor it would be too narrow for assembly purposes. Considerable discussion followed, other members agreeing with Mr. Colwill that the central hall was unnecessary. It was, however, felt by the majority that the plans as presented should be accepted, and this was resolved upon.

Strasburg Cathedral Repairs.

The great works which are at present being undertaken at the Cathedral of Strasburg have for aim to secure and consolidate the different parts of the sacred building. These comprise the re-flagging of the platform, the numerous fissures in which allow the infiltration of rain water. In order to carry out this work it will be necessary to remove the huge metal covering—an enormous circle of metal five yards in diameter—which closes an opening in the platform that overhangs the Square in front of the Cathedral at a height of 220 ft. This huge cover was last raised in 1840, and then a young Strasburgian, Auguste Franck, made a wager to jump across the opening, and did it.

Undelivered Keys: a Point for Property Owners.

At Knaresborough County Court, last week, a builder and property owner sued a tenant for a month's rent, on the ground that the keys had not been delivered up, and that therefore a new term of tenancy had been entered upon. Defendant's counsel quoted cases in which it had been held, in effect, "that it was quite sufficient to inform the landlord of the intention to quit, without running after him with the keys." His Honour held that the tenant had given proper notice, and had given up the keys within a reasonable time. The verdict was therefore for the defendant, with costs.

New Bridges for New Brunswick.

As the result of the conference between the Hon. J. K. Flemming, the Premier, and the Federal authorities, a Federal subsidy in aid of the construction of the expensive bridges on the St. John Valley Railway, New Brunswick, will be granted. The estimated cost of the structures is £250,000. The work will be undertaken early next spring. Sir Thomas Tait has stated that satisfactory progress was being
made with the location survey of the Gi
son and Minto Railway, which would
completed before Christmas. There w
a prospect that construction work wou
begin next summer. Progress towar
getting assistance from the Domini
Government was satisfactory.

Converting Market Walls into Shops.

Plans are being prepared for submissi
to Parliament for the conversion of t
blank walls in the Market facing Oxfo
and Union Streets, Swansea, into a li
of lock-up shops. The idea is to provi
for shops in Oxford Street with a depth
28 ft., with ground floor, first floor, a
second floor, and for Union Street sh
with less depth. Below the surface of t
market it is proposed to construct c
storage chambers for the convenience
those having perishable goods. The e
mated outlay is from £8,000 to £10,0
The plans have been prepared by
Moxham, of Swansea.

New Lambeth Bridge.

The London County Council will n
year apply to Parliament for authority
reconstruct Lambeth Bridge, at an e
mated cost of £220,000. This sum, h
ever, includes no provision for archit
tural decoration, and in view of the f
that the proposed outlay is less than h
that originally contemplated, the Impro
ments Committee think that an additio
£20,000 might well be spent in the arti
treatment of the structure, which is to
a steel arch bridge, 48 ft. wide. A reco
mendation in this sense was accordin
submitted at a recent meeting of
Council. The same Committee prop
that a lift, capable of carrying forty p
sons, should be installed at each end
the new Woolwich tunnel, at a cost
£5,000.

FEDERATION NEWS

York.

The annual meeting of the York Master Buil
and Contractors' Association was held at the
George Hotel, on December 7th, the president
W. E. Biscomb) in the chair. Mr. W. E. Bisc
was re-elected as president, Councillor J. H
grave as vice-president, Mr. Charles Dent as
surer, and Mr. J. Hague as secretary. The e
tive committee were elected for 1912 with the
lowing alterations: Mr. H. Hopkins in plac
Ald. James Birch; Mr. C. Martin in place of
J. W. Biscomb; and Mr. W. J. Bellerby in
of Mr. William Bellerby. The various stan
trade committees were elected with several al
tions and additions. Messrs. W. E. Biscomb
Dent, and Councillor J. Hardgrave were re-ele
as delegates to the Yorkshire Federation for
year 1912. Councillor J. Hardgrave and Mr
Dent were elected representatives to the an
meeting of the National Federation to be hel
London next January. Councillor W. H. Birch
Mr. T. Belt were elected auditors. The secr
read the report of the year's working, which wa
proved and adopted. The treasurer read the s
ment of accounts and balance sheet, which
adopted, the treasurer being thanked for his
vices.

A recommendation was brought forward
the executive arising out of interview with the
ters' Trade Committee that the rate for ca
charges on and after 1st March, 1912, should
8s. 0d. per day, or 4s. 6d. for the forenoon po
and 4s. for the afternoon portion, with 1s. 3d.
hour for odd employment. An amendment was
posed by the carters that the rate should b
per day, or 5s. for the forenoon portion, 4s. fo
afternoon portion, and 1s. 6d. per hour for
employment. The amendment was defeated,
the recommendation of the Executive being p
the meeting as a substantive motion, was carr

It was proposed that the Trade Committees
forthwith consider the working rules, and
Executive be empowered to give such notice
alteration as were considered necessary on b
of the association.

It was unanimously resolved that seven
written notice should be given to the member
any recommendations brought forward by the
cutive as to alteration of any of the rules, by-
or regulations of the association.

It was unanimously resolved that the a
dinner be held early in the new year, and the
cutive were empowered to make all the arra
ments.—J. HAGUE, Solicitor, Secretary.

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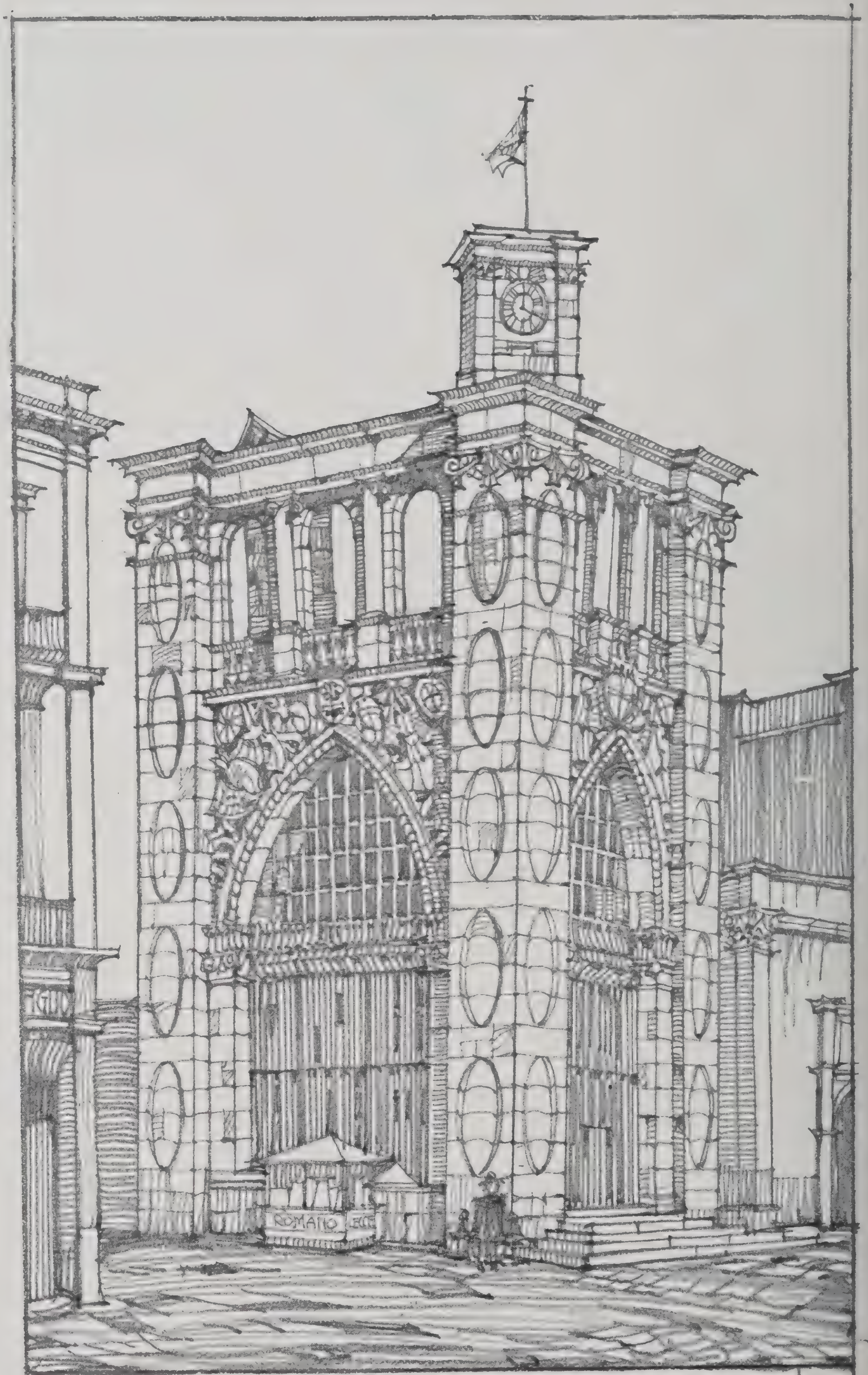

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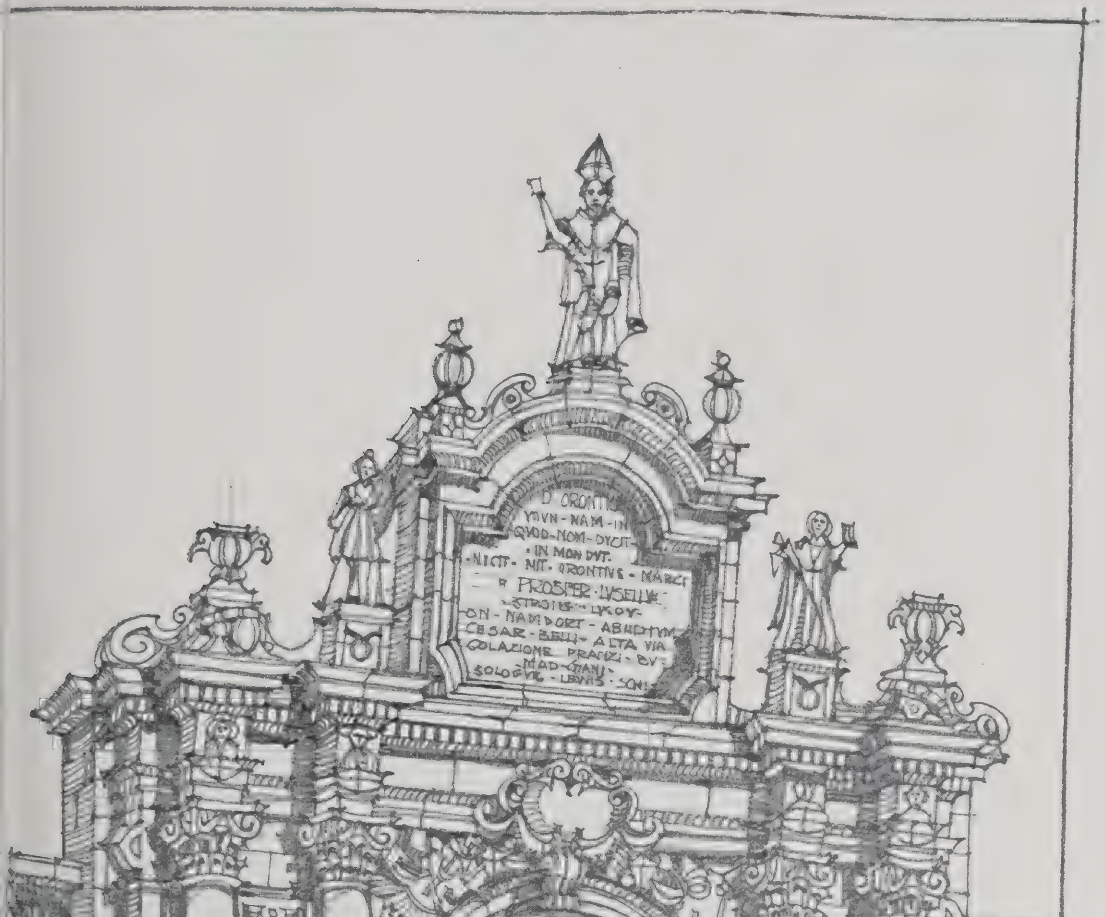

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THE ARCHITECTS' &
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WEDNESDAY,
DECEMBER 27th, 1911.

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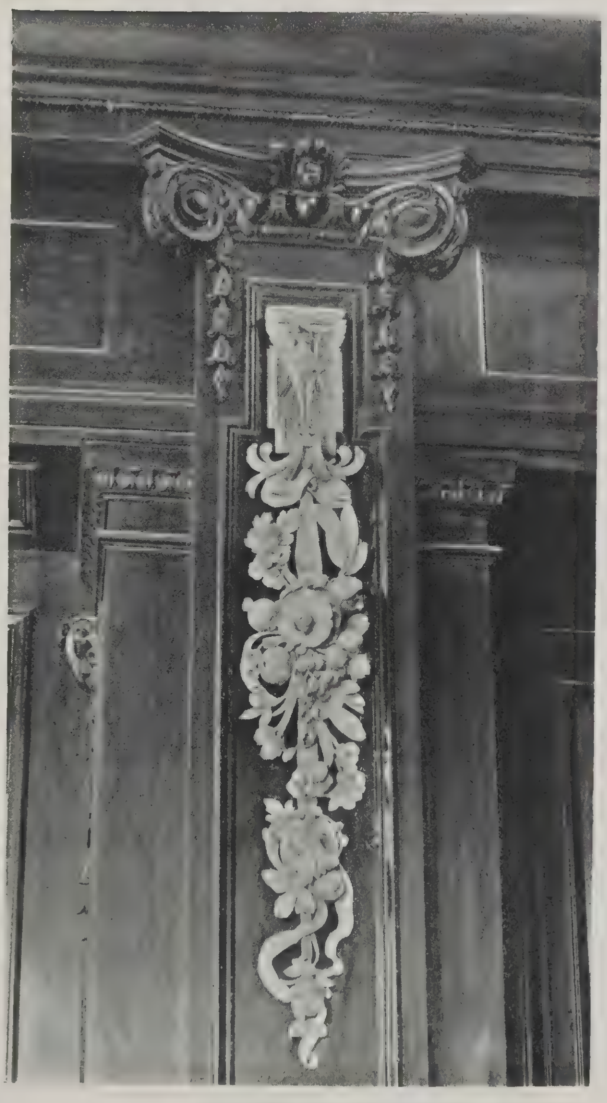
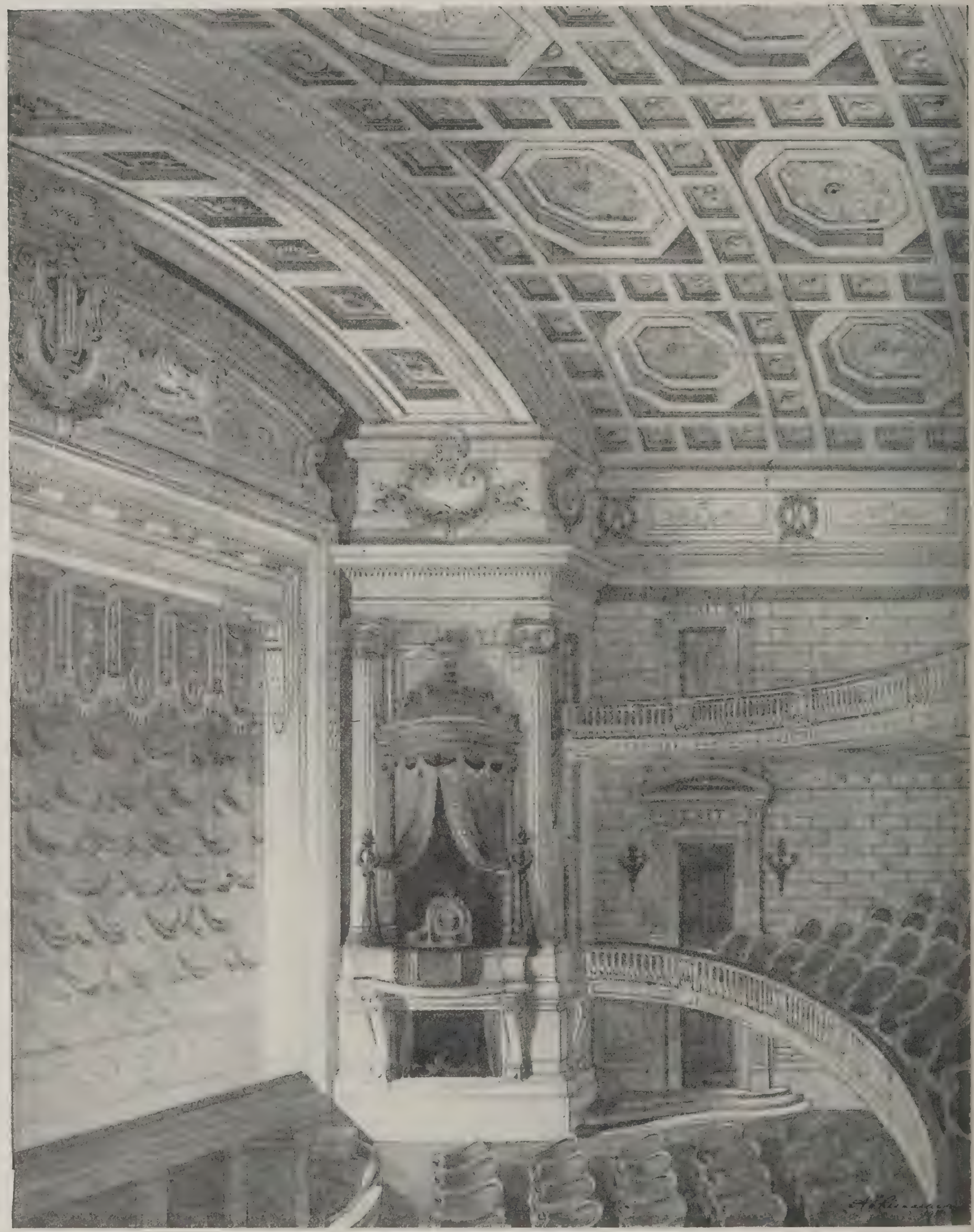


DETAIL OF WOODWORK IN BOARD-ROOM, ROYAL LIVER BUILDING, LIVERPOOL.

W. AUBREY THOMAS, ARCHITECT.



HIS MAJESTY'S THEATRE, MANCHESTER: INTERIOR.

HORACE FARQUHARSON AND RICHARDSON AND GILL, ASSOCIATED ARCHITECTS.

(For particulars see page 672.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 27th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34. No. 833.

NOTE: The List of Contents will be found on page IV. of the front advertisements.

Plan and Design in Competitions.

THE above heading is perhaps open to a criticism, in the sense that plan is really a part, and an integral part, of architectural design, and ought not to be considered as a separate element. But we are only using it here in the sense in which it is often used in speaking of the relative merits of cometition designs. We hear it remarked that Mr. A sent in a eautiful design, but that unfortunately his plan was very efective; or that Mr. B's plan was admirable, but the elevaions were so exceedingly poor and uninteresting that no one ould wish such a building to be erected. Of course, designs hich could be described in either of those terms are radically efective in an architectural sense, for good architecture really neans a good plan as the basis of the whole; but in common onversation, even among architects, plan and design are often lisconnected and regarded independently; and in the case of ompetitions the claims of these two kinds of excellence, plan nd appearance, we will say (to avoid the unconsidered use of he word "design"), are often among the puzzles of the ssessor, who finds them perhaps thoroughly united in no one f the designs submitted, and has to decide whether it is better or the promoters, and fairest to the competitors, to choose the est and most convenient plan, or the most artistic and picuresque elevation. In the pre-assessor days the dilemma was voided by the fact that the committee almost invariably elected the designs for their elevations or perspective views, s they could discern an effectiveness in these, while in most ases they could not tell whether the plan was a good one or ot, having had no experience in reading the meaning of a lan. And the assessor is in the difficulty with most comnittees, that if he selects the best plan, and the elevation rawings are not very striking, he is making a selection which hey cannot understand, and the meaning of which he has to xplain to them. And one of the wholesome consequences of mploying assessors in competitions is that, since the institution f this system, plan has become of much more importance in aining competitions than it used to be. Yet we can imagine he assessor himself, if he be a man of specially artistic ympathies, being doubtful in his mind, whether he should ive the promoters the best plan at the cost at the same time of ausing the erection of a perfectly commonplace elevation; and t is a fact that men who make very good and workable plans ften do not produce interesting elevations; and it is unortunately still more often the case that a man who produces most picturesque and interesting elevation has not the ghost f a notion of planning. How is an assessor to decide in such dilemma?

On one great occasion, in old days, there was a simple way uggested of dealing with this question. That was in the reat competition for the Law Courts, when it was naïvely laid lown by the committee of selection (which we believe did not nclude any architectural experts) that, in deciding on the reative merits of the schemes, the best plan was to count 3 marks, he best design 2, and the best drawing 1. Of course, drawing ought not properly to have counted at all; and if one man had been placed first for drawing and design, as might very well have happened, and another for plan, there would have been a tie, and someone would have to give a casting vote. What did happen was just as embarrassing, and from our present point of view perfectly absurd; Edward Barry was adjudged best in plan, and Street in design; who was singled out as the best in drawing we do not remember. But the consequence was accepted quite calmly by the committee; Street was informed that his design was the best, but that he must carry it out on Barry's plan. It seems almost incredible now that such a solution should have been seriously entertained, or that two architects of such different aims and feelings could have worked satisfactorily together. Barry was prepared, however, to abide loyally by the decision, and to allow Street to clothe his plan with Gothic detail; but Street was much the stronger and more influential man, and succeeded in pushing Barry out. Street was undoubtedly perfectly right in his contention that such a way of carrying out a great building was absurd; but according to the understood terms of the competition it was he who ought to have given way; Barry was very unfairly treated, and the result is that we are saddled with a badly planned Law Courts illustrated by very powerful and masterly Gothic detail. Had Barry had his rights we should have had well-planned courts and a design which possibly, at the present day, would be more approved than the existing building, now that the fever for Gothic has died out; though the detail would probably have been rather commonplace.

That was a crucial instance of the difficulty of deciding, in an important competition, between the claims of convenient planning and good architectural appearance. But the dilemma is one that is constantly cropping up in connection with competitions. The promoters will say that they wish for a building which shall be an architectural ornament to their city, and so on; as to how it should be planned they generally say nothing, because they have no ideas as to the method of laying out a plan. They do not generally go further than to state that certain rooms must be on the ground floor or on the first floor, and perhaps that certain departments must have separate access from the street; beyond that the instructions seldom go.

Now if in such a case the assessor finds a plan which fulfils all the stated requirements, besides providing for that general convenience of arrangement which is a most important desideratum in a large building, but which only an architect can properly estimate from the study of a plan—suppose he finds this excellent plan combined with elevations which are commonplace in character and which cannot constitute the building an architectural ornament to the town—and such cases do occur—what is his duty towards his clients, the promoters? It is rather a difficult question. The general result is that what the assessor considers the best plan gains the day; and there is this to be said for it, that a badly arranged inconvenient plan is a permanent injury to the users of the building, though it is one which they do not find out till they come into occupation of it; while they may be exceedingly comfortable in a building the exterior of which adds nothing to the architecture of their city. It seems that in such a case the assessor should frankly put the case before them: "This is an admirable plan, but I do not at all admire the exterior as architecture; this other design, No. —, has various defects in the planning, but it is a really fine piece of exterior architecture. Which do you prefer, to have the best planned building, or the best-looking one?" That question could only fairly be put, however, if the inferior plan does not contradict any of the specially stated requirements; if it does, it should be out of court; the question can only be raised in a case where the stated requirements are fulfilled, but the general arrangement is not so good as in another plan. One sometimes finds that an assessor who is much taken with the architecture of the elevations will ignore the failure to comply with specified requirements in the plan, in order to get in a good design; but that is not a fair solution. Requirements which are specified in so many words ought to be regarded as necessary to the acceptance of a design, otherwise there is a manifest unfairness to those competitors who have duly observed them. Apart from that, it would seem to be a reasonable course to put it to the promoters whether they would rather have the best plan or the finest elevation; always supposing that the plan is not altogether and radically bad.

In the case, which may sometimes occur, where there is no good elevation accompanied by a good plan, it would be, as it seems to us, the duty of the assessor to tell the promoters that the competition was a failure, and that there was no design that he could recommend for acceptance. If there is no alternative between having a good plan and a wretched elevation, or a fine elevation and a thoroughly bad plan, there is, in the true sense of the word, no good design in the competition, and it is better to say so candidly. But happily we may regard this, in the case of important competitions, as more a theoretical than a probable contingency.

The Newer Responsibilities of Architects.

OF the four papers on this subject which had been announced for the last meeting of the Royal Institute of British Architects, only two—those by Mr. W. Henry White and Mr. Greenop—were read, chiefly for want of time, but also, we believe, on account of other reasons. Mr. Greenop cited some cases in which architects had been disgracefully treated and had found no redress in law, partly from the unsatisfactory state of the law and partly from imperfect understanding of the case by judges and juries. But we feel bound to say that cases were cited in which, while the architects were represented as victims, they were really to blame; and no good will be done to the profession by trying to make out that architects are always in the right. No doubt Mr. Greenop is justified in his insinuation that "allegations of negligence are the most promising card to play when it is desired, from any cause, to avoid payment of an architect's fees"; and for this reason nearly all the cases he brought forward of injustice to architects came under this head of "alleged negligence." There have been some very discreditable cases of attempts by clients to fix a stigma on the architect and to avoid paying part of his fees, under the pretence that he was guilty of culpable negligence; but it is only fair to the law to say that these unprincipled attempts have not always succeeded; we remember one very important case of the kind where an American millionaire who had built a house in England endeavoured to saddle his architect with having culpably exceeded instructions in the matter of cost, when the millionaire not only had to pay in full, but had also to listen to some very severe strictures from the judge on his conduct. On the other hand, there are from time to time cases of flagrant injustice to architects, and we quite agree with the reader of the paper in his expressions in regard to them.

One or two very bad cases were mentioned of clients refusing, apparently out of mere temper or caprice, to pay the builder on the architects' certificates, a duty which was part o the contract. A curious light was thrown on the way the lega mind may regard such a case by the speech of a lawyer wh took part in the discussion, and who maintained that the architect, in giving certificates, was not in the position of a arbitrator between the client and the contractor; he onl became an arbitrator when he had to give the final certificate Surely he is equally an arbitrator every time he has decide that work up to the value of a certain sum has been done, an certifies that this sum is now and at this date due.

Architecture and "the Industrial Tangle."

ONE of the most pregnant, not to say poignant, chapter in Mr. Ashbee's book "Should we Stop Teaching Art' (3s. 6d.: Batsford) is the fourth, which treats of "Th Place of Architecture in the Industrial Tangle." Fifty pe cent. of English architects, he says, have been improperl educated, "or, to put it in a more kindly way, they have com to their work with merely an 'elementary' or an indifferen 'secondary' school training. It is the pressure from thi weight upwards of insufficiently trained men that makes th overcrowding of the profession so serious, and lowers the standard of its work. "I shudder," he continues, "at the though of the many random office boys who may have done od tracings in the offices of my professional colleagues or in mine who may now be 'practising architecture' or 'doing building,' in Great Britain or the Colonies. I look about the streets an into the builders' catalogues, or down the outskirts of garde city suburbs, and say to myself, 'Well, perhaps there he is There is the maker of the new Architecture—the youth of th type of Wells's Kipps, and the Uncle in "Tono Bungay," o Arnold Bennett's Denry Machin—it is he who has got hold o it. It is he who is managing for us the craft of building, an despite the Royal Institute, despite the Art schools, it is he wh is doing 90 per cent. of the building in the country. Wit him and his friends it is not a question of Architecture at all but just how to do the best they can for themselves out of th existing muddle.'" Mr. Ashbee does not blame these me for the way they snatch their living, but he blames "the system which in its folly makes this sort of pettifogging freebooter possible."

University of London School of Architecture.

AT a recent meeting of the Senate of the University of London the Principal announced that he had received from the Chancellor (Lord Rosebery) a letter written to him by a gentleman, who desired for the present to remain anonymous, offering to erect at University College the buildings for (a) the combined School of Architecture (resulting from the amalgamation of the schools at present separately conducted at University College and King's College), together with the following—so far as a sum of £30,000 will suffice—viz. (b) Studios for the teaching of Sculpture and the rearrangement of the School of Fine Art, and (c) the Department of Applied Statistics, including the Laboratory of Eugenics. A resolution was passed expressing the Senate's cordial appreciation of this munificent offer, and the matter was referred to the Academic Council, to the University College Committee, and to the Finance Committee for their consideration and report on the earliest practicable date. The name of the donor of the sum of £30,000 must, for the present, remain unknown, but it may be stated that it is a person with a keen interest in architecture who desires "to see the completion of one of the most beautiful buildings in London." The new buildings are to be erected at the north-west of the present building. The Senate of the University will, it is expected, be in a position to proceed with the work as soon as the necessary formalities have been observed. The new buildings will be in keeping with the

sting main block, and will occupy a site slightly recessed
m, but on the frontage of, Gower Street. With the new
emical Laboratories, which are to be built on the north side
the University College property, the premises will, in the
ır future, form a very important and extensive block.

Rural Housing.

) EAN FRY, of Lincoln, fearing that, amidst the conflicts
that are gathering round political measures, social re-
forms will be largely forgotten, has addressed a letter
he Press in which he emphasises the pressing need of active
erest in rural housing. Those who know the country well,
says, feel somewhat strongly that something more than the
itary and housing laws we possess is wanted. Local autho-
es dare not, for lack of new cottages, close much unsanitary
perty. The surplus of population is still being driven into
es for want of homes. The housing laws provide laws, but
re is no money. Rural rates cannot bear more loss. What
needed in England is some subvention, as in Ireland the
asury gives by special Act. This money the Development
nmissioners possess. They too can combine housing and
ısit and road problems and solve them, as they must often
solved, together. The Dean desires to make known the
k of the Rural Co-partnership Housing Association, whose
e is at 4, Tavistock Square, London. It is entirely non-
itical; it has taken over the rural problem from the still
ter known Co-partnership Tenants Housing Council; its
ect is to advise and assist in the gradual solution of this
ent question. If it is supported by public sympathy it
y be able to gathered up into union and efficiency much
ated action, and to follow out a definite national policy for
al housing. In commending the Dean's plea, we should
to point out that the existing local by-laws are often so
ngent as to be actually prohibitive of the building of cheap
llings, and this is surely a matter that should receive imme-
te attention.

Civic Architecture and the Civic Mind.

would be very easy, as a rule, to lay too much stress on
what the average mayor or alderman says about art.
We are therefore the less disposed to attach overmuch
ortance to the long speeches that were made by civic func-
aries at the opening of a recent exhibition of the Halifax
s and Crafts Society. Still, it is instructive to get an
ısional glimpse of the civic mind in its wrestlings with art.
Halifax an alderman is reported as having said that "in
se of time there would be by-laws which would lead their
ıitects to give them more artistic buildings than they had
he present time. He thought that through the influence
ıe Mayor architects would endeavour to make new buildings
cts of pleasure and delight to the town." Straightway
Mayor rose to the occasion and said that in all his ex-
ence as a public man he had never been so absolutely stuck
on a subject as he was that day on arts and crafts. At
ol, he said, he had become rather celebrated for his in-
iency in drawing. He confessed, however, to a keen
est in town planning. "He thought that if some of the
itects, not in Halifax, but in other towns, had an elemen-
training in art, they would have added very materially to
beautifying of their towns. He hoped that the artist
ld join with the architect. After all, the architect was only
to plan and design a building. He hadn't much idea
t the art of placing it. The Improvement Committee in-
ed to consult the architects, and they would welcome any
tance that came from the artists." It is impossible not
dmire the modesty of the Mayor's confession, however ill
ıy seem to assort with the Alderman's touching confidence
s worship's power to inspire the architects to the making
objects of pleasure and delight." But nevertheless the
ok seems to be rather hazy. It is not very easy to understand either the art effect of by-laws, or the assumption that architects—"not in Halifax, but in other towns"—have failed from lack of elementary training in art to add to the beautifying of their towns. These utterances are a curious gloss on the frequent complaints that architects are devoting too much attention to the artistic side, and that artists—that is, painters and sculptors—betray, as a rule, very erratic notions about architecture. Also the Mayor's statement that the architect "hadn't much idea about the art of placing" the building he designs and plans does but scant justice to the profession, although it is a misconception of the architect's function that has sometimes been shared by the architect himself. This utterance, read in conjunction with the notion that improved by-laws will give the architect greater scope for artistic expression, may enable us to see daylight through the mist of oratory. The speakers evidently realise three cardinal needs of betterment—generalised planning and designing with central control; a due regard for æsthetic amenity; and a rational co-ordination of forces. Evidently we are groping towards the light.

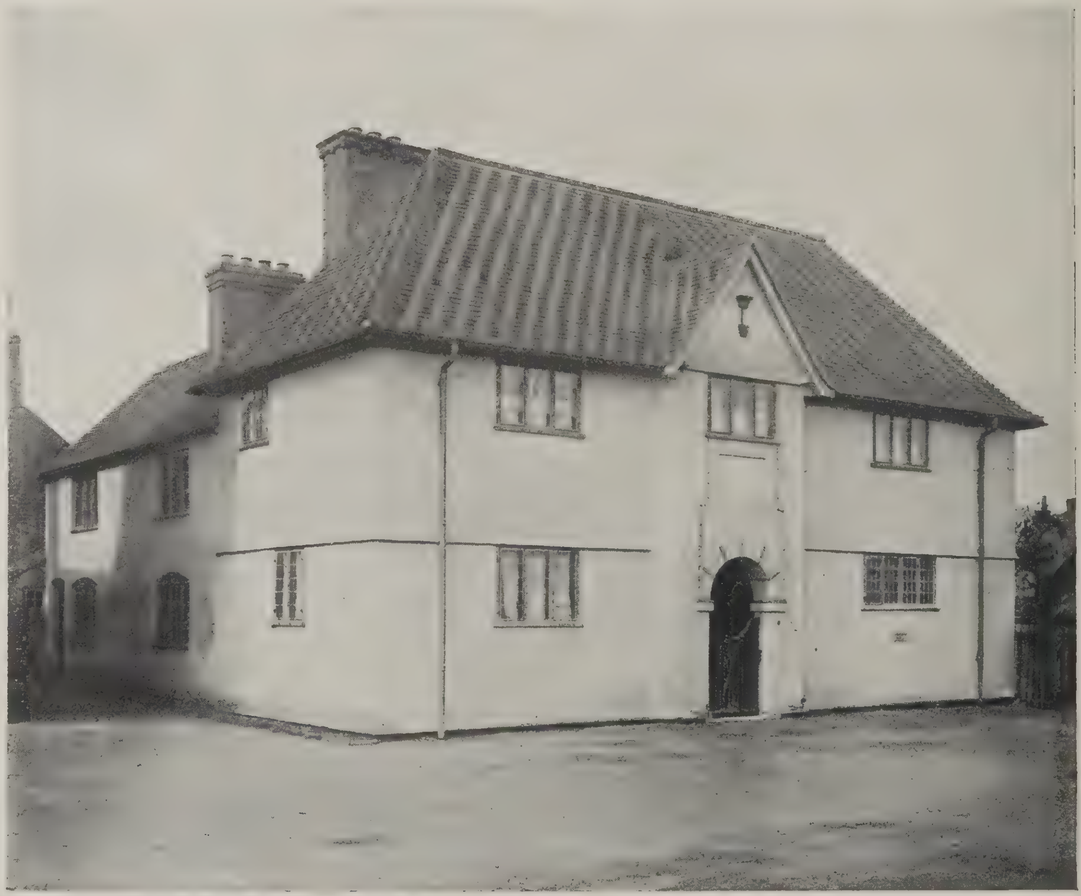
The Church at Overstrand, Cromer.

WITH respect to the resolution on this subject passed by the Society of Antiquaries, as recorded in previous issues, the Hon. E. Lyttelton has addressed to the "Times" the following observations: "It is first stated that the restoration of the church for use will destroy 'much of the evidence of antiquity which still remains.' Possibly. But would not this objection, the only one mentioned, hold good equally against all restorations of mediæval churches, no matter how urgently required for modern use? Are we to believe that the Society wishes all Norfolk churches to be as they were, say, in 1830? But the next clause in the resolution deepens the obscurity. The residents in Overstrand are recommended to protect the ruin from further ravages of ivy and weather, so as to preserve it, presumably, as an interesting object. But whatever precautions may be taken with this object could be equally well taken if the building is restored. If for the preservation of the fabric as a ruin the ivy would have to be partially or wholly cut away, the restorers would of course do what is necessary and no more. The Society have, in short, deprived themselves of their strongest argument by insisting that for æsthetic reasons the ivy may have to go. We were afraid that the responsibility for this would rest with the restorers. Will the Society explain? The reasons for the restoration are simple. The beautiful mediæval church was allowed to fall into ruin, and in 1867 a grievous blunder was made by building a poor, inadequate church in the churchyard, far too small for the present summer congregations and taking up grave-space. This structure standing by the side of the ruin is a witness how far modern Norfolk has fallen below the standard of local patriotism which was reached in the later Middle Ages. We are resolved, if we possibly can, to remove this discredit by repairing the ruin, which is in remarkably sound condition, for Divine worship, and presenting a fair evidence to passers by, not of apathy and decay, but of vigorous life and growth. This we conceive to be the duty resting on us as inheritors of a sacred heirloom."

In reply to this letter, Mr. A. C. Benson, of Magdalene College, Cambridge, writes as follows: "I think the mistake which the Headmaster of Eton makes in his letter is a very common one. It is simply this, that he, like many other people, genuinely believes that antiquity and beauty are things which can be preserved through and by careful and 'reverent' restoration. No thorough restoration, in the ordinary sense in which the word is used, can ever be reverent. Of course, when a building is just on the verge of dilapidation, if the process of disintegration has not gone too far, it may be just possible, by very judicious and sparing handling, to preserve its ancient beauty, if not undimmed, at least not hopelessly impaired. But when it comes to 'restoring' a beautiful ruin, it practically means destroying it and substituting a new church. Cannot people be brought to understand that what is commonly called restoration means the destruction of something venerable and beautiful, and the substitution of something which is certainly not venerable, and probably will not be beautiful until it has had time to become so? I believe it is no exaggeration to say that nine-tenths of the beauty of most buildings depends upon their age, their abandonment to the influences of usage and weather, even to a noble and not disrespectful neglect. A restored church is too often nothing but a hideous copy of an old church, with its beauty and its life-history swept away. It is like trying to 'restore' a comely and gracious old face. Why cannot a new church, if needed, be put side by side with the ruins? Why merge a charm, which is certainly there, in a building the charm of which will probably be a century or two in coming?" This controversy is apparently growing very subtle, and has resolved itself into a renewal of the eternal antagonism between the "intellectuals" and the "emotionalists." The idea of a brand "new church side by side with the ruins" was hardly one that we should have expected to come from the emotionalist side; and "abandonment to a noble and not disrespectful neglect" is very pretty phrasing, but is it anything more than that? Here again we seem to detect sharp and irreconcilable antagonism between poetry and practicality. As to the assumption that the charm of a building is a century or two in coming, here, again, the rationalists and the sentimentalists seem to be in hopelessly irreconcilable antagonism; and we must confess to some lack of sympathy with the view that the beauty of a building necessarily depends upon its decay.

Looking Ahead and Aloft.

WHEN, a few years ago, the aeroplane beca demonstrably practicable, we ventured upon a f speculative remarks as to the possible effects on arc tecture of this so-called "conquest of the air." These provok a humorous sketch in which were suggested some tempor expedients to meet the new conditions. Mattresses, bolste tea-cosies, cricketers' leg-guards, and other familiar forms padding, were ingeniously applied, in the interests of aviator, to the blunting of Gothic and other spiky projectio and, for the benefit of the property owner, to the muffling chimney stacks (æsthetic effect subordinated to practical c siderations). The matter is now becoming, it would seem practical issue. At the last meeting of the London Cou Council, Mr. R. M. Sebag-Montefiore asked the chairman the Establishment Committee whether, seeing that the n County Hall would not be ready until 1916, his commit would consider the advisability of providing a roof garage the use of members' aeroplanes. Mr. Dove (chairman of committee) replied that as aviation had not yet reached stage of being an exact science, "he regarded the river a safer landing place than the roof of the new County Hal If, he added, by 1916, however, the science had advanced such a degree that a landing stage was desirable, no doubt proper facilities would be provided. On the whole, this m be regarded as such a sympathetic answer as might be expec from a gentleman bearing a name that would look very on a "bird-man's" certificate. We do not quite clearly unc stand, however, why the reference to landing in the river greeted with laughter. Was it regarded as a bull, as persiflage, or merely as a dry remark?



Considerable additions to Repton School have recently been made from designs by Messrs. Forsyth and Maule, FF.R.I.B.A., of London, W., the work including a new boarding house, additions to the headmaster's house, a power house, and the office building shown above.

OFFICE BUILDING, REPTON SCHOOL. FORSYTH AND MAULE, FF.R.I.B.A., ARCHITECTS.

HE LEGAL LIABILITIES OF AN ARCHITECT

*At the meeting of the Royal Institute of British Architects held on Monday
cember 18th, two papers on "The Newer Responsibilities of Architects" were read
Mr. W. Henry White, F.R.I.B.A., and Mr. Edward Greenop, A.R.I.B.A., as
resenting the Practice Standing Committee. Two other papers, by Mr. William
odward, F.R.I.B.A., and Mr. A. Saxon Snell, F.R.I.B.A., were also intended to
read, but, owing to lack of time, were obliged to be held over till a later date.
low are given summaries of the papers by Mr. Henry White and Mr. Greenop.*

MR. HENRY WHITE'S PAPER.

Dealing first with law cases relating to
ilding, Mr. White referred to points
ich may have been regarded as im-
terial, but upon which the decisions of
Courts turn. As an instance it was
nted out in a recent case that instruc-
ns to an architect by a client not to issue
ther certificates was not sufficient to
tify him in withholding them, and that
hing but the dismissal of the architect
uld have been sufficient to have pre-
nted him from continuing to act.
rther, if he had been appointed arbi-
tor between the parties he could not
ve been prevented from issuing a certi-
ite, nor could his decisions have been
llenged except on the grounds of fraud,
ss negligence, or improper conduct,
en no doubt the Courts (quite properly)
uld give relief. Where the architect is
horoughly trained and competent man
s position of arbitrator would un-
ubtedly in most instances save both
nt and builder from vexatious law
es, and failing the architect being so
pointed, it seems very desirable in the
nt interests involved, that the building
tract should so provide for arbitration
to make it impossible to take a case
n it into the Law Courts until an award
d been made. It must of course always
open to either party to try to upset an
ard, but the award should be a con-
on precedent to a law case, and it ought
be possible to frame

A Set of Conditions

ler which such an arbitration should be
ducted as would prevent the enormous
ense which now usually obtains. If
Council of the Royal Institute of
tish Architects think such a scheme is
irable, said Mr. White, the Practice
nmittee might be set the task of devel-
ng it. The legal profession might not
anxious to endorse such a scheme,
architects know how difficult it is to
their highly technical cases properly
lerstood in the Law Courts, and the
lified technical arbitrator's award is
e likely to settle the points of differ-
e quicker, and with less cost, than the
rage law suit.

Ir. White next proceeded to refer to
change of late years in the methods of
tractors in carrying on their business.
re is an increasing number of con-
tors who sub-let their work, and, in-
d of having a practical and useful
wledge of building work as a craft,
being able to assist the architect in
ying out difficult matters, they now
their business from a counting house,
, having taken a contract, proceed to
erwrite their liabilities by a sub-letting
em which can only be described as a
ne of "heads I win, tails you lose."
s system is no doubt to some extent
ed upon them by the close competition
hich they are subjected, the exacting
s of trade unionism, and the legal re-
nsibilities thrown upon them by recent
slation; but the result to architects
ns detailed drawings, increased super-
on, and correspondence to an extent
unknown to the last generation. Again, the increased complexity of modern buildings, and the need for providing so much "specialists' work," all tends to increase the architect's responsibilities.

Specification Clauses.

Another of the architect's difficulties is caused by the client changing his mind as the work proceeds, consequent upon not understanding the drawings. Changes from the drawings and specification take place in almost very contract, and herein lies the danger of the "lump sum" contract and the advisability of making the quantities a part of the contract; indeed, it would seem to be the only fair and reasonable method, and would obviate some of the difficulties which arise under the head of variations. As regards the varying of materials or allowing a different brand from that specified to be used, great care must be exercised in doing this and advising the client thereon. The average specification that is brought before the Law Courts wants much revision to bring it up to the standard of modern requirements and limitations. Could not the Royal Institute of British Architects in the interest of its members suggest clauses as to the proper specifying of timber, a standard for concrete for floors, asphalt, paint, etc.—clauses which could be accepted by the profession and which would prevent so much conflicting evidence as is now given in the average building "case"? The answer might be made that these are matters of text-books and experience, but as regards the former they are certainly not written from the legal point of view; and as to the latter, let the benefit of the experience at the command of the Institute be placed before its members in a practical manner—let the Practice and Science Committees act hand in hand, and the benefit of their work be given in concise form for the guidance of all members of the Institute. In this manner the profession would be "speeded up" to a higher standard and less friction would result upon points which are now considered a matter of opinion, the result being that in most cases three or four architects are to be found on opposite sides and with diametrically opposed views—a fact which has earned for the professional expert the opprobrious title of liar in the third degree.

Liability of Architect to Client.

It does not seem to have been generally realised amongst members of the profession that the architect's position in relation to his client is a most invidious one as regards liability. The builder after the usual twelve months' maintenance clause has expired is freed from all further responsibility towards the client, but the architect remains liable up to the period allowed by the Statute of Limitations, i.e., six years. This is a ridiculous position!

No architect can "live upon his job," and it is a sheer impossibility for him to know every detail of work that has been put into a building. He is compelled to accept the lowest tender, often from builders of the client's selection, and however conscientious and careful he may be it is obvious that, unless he stays on the work during the whole time it is being carried on, he cannot be sure that every part has been done properly. With large works and competent clerks of works and good contractors he may accept his liability with equanimity, but with the average work carried out under his directions, and without a clerk of works—for whose services the client does not think he should be called upon to pay—he should have a clear and definite understanding with his client on the subject of supervision, and the builder should remain responsible for any defective work the faults of which only develop after the ordinary period of maintenance has elapsed.

Without divulging secrets it may be permissible to state here that the Practice Committee have been working for some time past upon the revision of the Royal Institute of British Architects' Terms of Building Contracts and the Institute Schedule of Professional Charges. Their labours have been devoted towards the improvement of these documents in the interests of all concerned, and it is hoped they will very shortly be put before a business meeting of the Institute for approval and adoption.

MR. GREENOP'S PAPER.

Mr. Greenop commenced his paper by referring to the question of alleged negligence. He cited a number of cases, which can only be briefly referred to here, owing to the limit of words allowed to the Press in publishing reports of the papers furnished by the Institute. Speaking generally, allegations of negligence may be considered as the most promising card to play when it is desired, from any cause, to avoid payment of an architect's fees.

The Finding of a Jury.

In commenting upon a remarkable case Mr. Greenop said that here we had a client who had been paying without demur for months upon the certificates of architects he had himself selected and imposed upon the builder, and who had contracted with the builder to pay upon those certificates, suddenly refusing to honour them, and then actually suing the architects for the sum so expended in costs. It is scarcely credible that, in face of the Judge's strong direction, he should be awarded by a jury not only the £600 claimed, but a further £150, apparently as "moral and intellectual damages."

Upon the case going to the Court of Appeal the Judges are unanimously in favour of the architects, but owing to some technicality which I personally am not able to appreciate, find it impossible to give judgment, with the result that all the proceedings have to be gone over again, at the end of which the architects' conduct is justified from the first. The evil appears to lie in the rottenness of a system by which the law allows such cases to be tried by such an incompetent tribunal as a jury.

Leicester Board of Guardians v. Trollope

Tried before Mr. Justice Channell, January 23rd, 1911. An infirmary was completed in 1906, and a final certificate given by the architect. In 1908, two years after, it was discovered that the floors were affected with rot, and £2,000 to £3,000 had to be expended in taking them up and relaying. The contract provided for 6 in. of concrete, then 2 in. of fine concrete, and wooden joists on top. It was found that wooden pegs had been driven into the ground upon which the wooden joists were laid, the space beneath being then filled in with concrete, leaving the pegs in. These pegs, it was found, had sucked up moisture from the earth, and so caused the joists and flooring to rot. A clerk of works had been employed, but it was contended by the clients that his duties were defined, in writing, as merely those of an inspector and assistant to the architect. The architect admitted that he had not seen the floor during construction, but that he had trusted to the clerk of works. Mr. Justice Channell, whilst expressing his regret, gave judgment against the architect, who, he thought, was not greatly in fault, but at the same time he expressed the opinion that the laying of the floor was not a detail which could justifiably be left to the clerk of works. It is interesting to note that the Judge expressed the opinion that the clients were in error in supposing that, as two years had elapsed since the date of the final certificate, they were debarred from proceeding against the builder.

With reference to this case, it should be added that the architect at the conclusion of the case communicated with the public Press, stating that the builders had always been anxious to be joined with him in defending the case, and that they were personally no parties to the deviation from the contract, which, as a fact, represented a merely insignificant saving. It also appeared that the builders, before the case was tried, offered to submit the matter to the President of this Institute, and to do anything he should order. They finally met the architect fairly in contributing towards the damages and costs. It is, therefore, pleasant to record that the attitude of both architect and builder in meeting the case was such as reflects credit upon them.

The Ownership of Drawings.

The law appears to be established by two cases:—Ebdy v. Gowan and Gibbon v. Pease. The former is an old case in which the building was not carried out, the architect being paid the two and a half per cent., and claiming to retain the drawings. The Court decided against him. In the second case, Gibbon v. Pease, the previous case was followed, both in the Divisional Court and the Court of Appeal. In the lower Court it came before Mr. Justice Ridley, who held that the law was governed by Ebdy v. Gowan and ex parte Horsfall, the latter a case dealing with the same point as regards a solicitor's papers. He refused to hear evidence as to custom to the contrary. The Court of Appeal supported the Judge below, adding that, even if he had admitted evidence as to custom, it would not have availed, as a custom must be reasonable, and such a custom would be unreasonable and bad. The opinion has been expressed in the profession that the case ought to have been carried up to the House of Lords. As it stands the retention of the drawings by the architect by special agreement with the client seems the only resource available.

Fees.

A case relating to the above, that of Tree v. Mitchell, tried before Mr. Justice Walton in 1909, it involved the question of abandoned work, and also of the builder's estimate exceeding the sum originally mentioned by the client as his limit of expenditure. There was also a complaint that the drawings were not prepared by the date agreed, as the result of which the client had to change his arrangements. The house was to have been erected at St. Leonards, Sussex. The original expenditure mentioned by the client was £2,000. The architect advised it was quite inadequate, and suggested £3,000, but was told to proceed. The lowest tender was £5,400, due to the addition of oak panelling, parquet floors, and other luxuries. The client admitted the advice as to £3,000, but said he was not informed the luxuries would increase that amount. The Judge, in summing up, said he was satisfied that the luxuries were added with the client's knowledge, but that no definite statement was made by the architect about them. He also pointed to the unsatisfactory feature that there were no definite terms drawn up upon which the architect was to act. The architect had claimed upon the Institute scale, namely 3 per cent., which amounted to £347, the work being abandoned. The Judge admitted the sum so arrived at was fair "if the scale was adopted," but gave the architect £200 only, as the case was, to use his expression, "a peculiar one."

With all respect to the learned Judge, the only peculiarity about the case would appear to be the judgment. The case seems a typical one. The client expects eighteenpence for a shilling all through, and notwithstanding the architect's warning goes on, hoping a miracle will happen. The miracle does not happen, and finding he has been wrong from the first the client abandons his intention of building. The amount awarded to the architect seems, said Mr. Greenop, at variance with the opinions expressed by the Judge in awarding it, and I think we shall all agree with his lordship in one observation he made, namely, that it was "a very unfortunate and extremely unsatisfactory case." At the same time, if there is a moral for us it is this. That the client should be regularly kept informed in writing by the architect of his position from time to time as the various stages of the matter are reached, so that in the event of dispute later he may be able to meet complaints with written evidence. Also that the sooner we get a schedule of charges which we can safely put into a client's hands as the basis of our contract when accepting a commission the better for us.

THE QUESTION OF CAVITY WALLS.

On behalf of the Local Government Board, Mr. R. C. Maxwell, barrister-at-law, has held an enquiry at the Municipal Offices into the application of the Liverpool Corporation for a provisional order, under sections 297 and 303 of the Public Health Act, 1875, to enable them to frame by-laws for the construction of hollow external walls in the erection of new buildings. The Town-clerk (Mr. E. R. Pickmere), in presenting an unopposed application, said a difficulty had arisen through the Health Committee finding that they had not a specific power to pass plans of houses at the Garden Suburb, Wavertree, showing cavity walls. The only power possessed by the Corporation in respect of hollow walls was one under section 27 of the Liverpool Improvement Act, 1882. That section had reference to the prevention of damp in dwellings, but there was some doubt as to the extent of the power, and after conference with counsel and the Local Government Board this application had been drafted. A letter just received from the Board showed that they would do their share towards the promotion of the p visional order.

Mr. Alexander, city building survey gave evidence that it would be decide advantageous to the Corporation to h the power sought. It was not propo to erect warehouses with hollow walls.

Mr. W. H. Parkinson, chairman of Works Committee, said he was anxi for builders to be permitted to constr hollow walls under proper conditions.

Alderman Richard Kelly, speaking a practical contractor, approved of holl walls when well bonded.

Mr. G. Lister Sutcliffe, architect to Co-Partnership Tenants, Limited, Lond stated that in the municipal area of Wavertree Garden Suburb 600 or m houses would be built at a considera elevation above sea level. It was undes able to have so many houses cement rough cast as to be monotonous. Her hollow walls were necessary, as an alt native, to keep the buildings dry. Sta lity would be ensured by proper bond He was willing to accept the provisi contained in the model by-laws of Local Government Board.

Alderman Shelmerdine expressed hope that if hollow walls were built as p titions or party-walls, the hollows would filled in with fire-proof and sound dead ing-material.

The Inspector, in closing the inqui said there had been no objection to princ'ple of the proposal, the discussi having related only to the details of proposed by-laws.

VISIT TO THE ROYAL LIVER BUILDINGS, LIVERPOOL.

About 40 members of the Warringt Building Students' Association have visit the Royal Liver Office Buildings, whe they were received at the side entrance Mr. Macallum, the clerk of the works, w directed the party over the building. Aft inspecting the beautiful marble lining t walls and ceilings of the corridors of t ground floor, the party were conveyed lifts to the ninth floor. Here the boar room and other private offices were see the massive oak and walnut panelling the walls being much admired. Climbi a long flight of stairs, the party we shown on to the large flat concrete ro From the roof a better idea of the gener arrangement of the building was obtaine Climbing again, the party were direct into the tower, where the great clock wi its mechanism is to be seen. It was he explained that the clock measured 24 in diameter; the towers being 305 ft. height from the basement line to the brea of the dome, 138 ft. from the tenth flo flat to the latter, and a total height of 3 ft. to the top of the huge bird. Althou the outside walls were faced with No wegian and Scotch granite, the gener structure is of ferro-concrete. The buil ing is heated by hot water on the forc circulation principle. The pipes abo 1 in. in diameter are fixed in the floor ne to the walls, also behind panels of "Du ato" in the dado of the walls. The roon are ventilated by inlets in the walls behi these panels, and the warmed air is allow to pass through grating at the top of t panels in the room. There are ducts fro the outlets in the walls near the ceilin and fans are used for clearing the buil ing of impure air. In the basement a the large boilers with their mechanic stokers for generating steam to raise t lifts, pump the water, and generate ele tricity.

OUR PLATE.

The Architecture of Lecce.

The Centre Plate issued as a supple- nt to this week's Journal shows two teworthy structures at Lecce, an almost known city which was brought into pro- nence by Mr. Martin Shaw Briggs in ticles which he contributed to the "Archi- tural Review," and afterwards in his lume entitled "In the Heel of Italy."

Porta Rusce.

The Porta Rusce is built on the site of older gateway through which ran the d to ancient Rusce. It formed the prin- al entrance to the city till the Strada ova was made from the Arco di Trionfo. e old gate fell at the end of the seven- nth century, was rebuilt by the Sindaco osper Lubelli in 1703, and was restored 1854. Richly decorated, it bears statues Enippa, Malennius, Daunus, and Ido- neus, the four principal characters in thical Lecce history.

The Sedile,

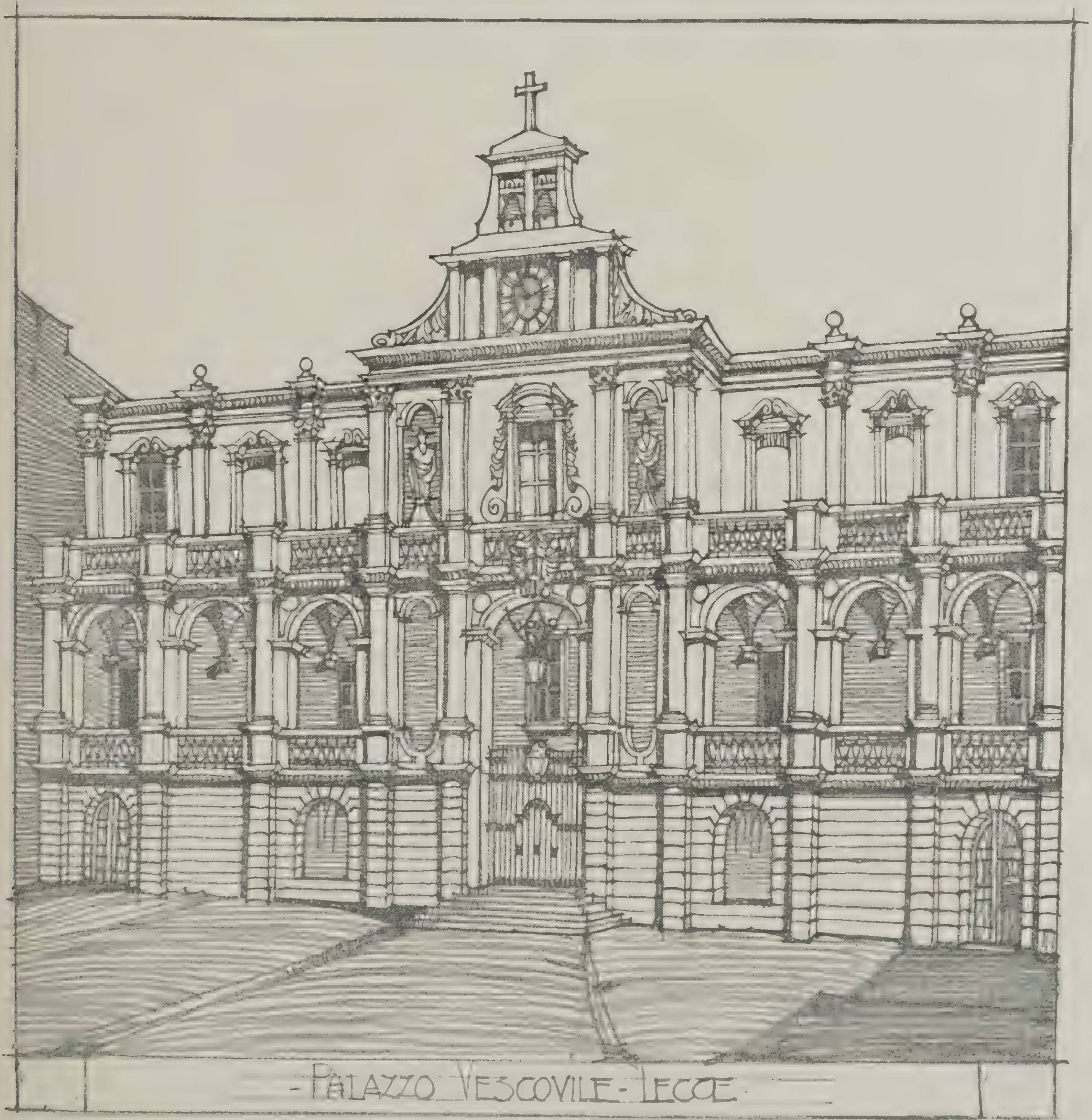
or Museo Civico, is a strange little building in the principal piazza, and was erected in 1592 by the Sindaco Pier Mucinico as a place of meeting for the public authority. Of late it has been adapted for use as a civic museum, the lower storey glazed to protect statuary within, and an electric clock (the invention of a local genius) perched anglewise on the cornice. There was a clock somewhere in or on the building previously, but not in so foolish a position, and none of the modern alterations in this little curiosity of architecture can be recommended on artistic grounds.

The Episcopal Palace.

The illustration below shows the Episcopal Palace at Lecce. The local records tell us that this fine building, known as the Vescavado, is the work of Monsignor Geronimo Giudano (1420-8), who first laid the great Piazza del Duomo, but a great deal of restoration took place in 1874. In design it is totally unlike anything else in this city of architectural surprises. It is surrounded by shops on the ground floor, and the great entrance is carved with the arms of Lecce, Aragon, etc.

A £60,000 BRIDGE CONTRACT.

In connection with the opening up for navigation purposes of that branch of the River Nile at Cairo known as the Bahr-el-Aama, and the proposed realignment of the navigable channel of the river, tenders for the construction of an entirely new bridge to replace the existing Pont des Anglais were, some three months ago, invited by the Egyptian Public Works Department from all the leading bridge engineering firms of Great Britain, Continental Europe, and North America. Of six tenders submitted that of the Cleveland Bridge and Engineering Company, Ltd., of Darlington, has been accepted. The firm undertakes to complete the bridge in 22 months, the price being £60,000. The new bridge is required to accommodate road and tramway traffic, and there will be footpaths carried upon cantilevers on either side, the width of the bridge between parapets being 19 metres. In addition to two approach spans there will be a rolling lift span, giving a clear opening for river traffic of 63 metres.



DRAWN BY RALPH THORP.

SOME BOOKS ABOUT CHURCHES.

All Saints', Horseheath.

A marked revival of interest in church architecture is signalised by a steady increase of publications on the subject. These range from portly volumes on the general to slender monographs on the particular. There can be but little doubt that in this way the church is upholding its traditions as a radiant centre of light, since most of those who become interested in sacred architecture may be reasonably expected to extend their survey to secular aspects of the art; although it must be regretfully admitted that, for a certain type of mind, architecture begins and ends with "Church Gothic." Better that than nothing, perhaps, so long as the holder of the restricted view realises the disadvantages of his limitations, and does not attempt to impose them on the architect with whom he may chance to have dealings.

It is noticeable that many recent publications on church architecture have been written by ladies. This is the case with two that are now before us. Mrs. or Miss Catherine E. Parsons describes All Saints' Church, Horseheath, Cambridgeshire, in a cloth-bound volume containing more than a hundred pages, with half-a-dozen excellent illustrations, including a very useful folding plan.

The first stone church at Horseheath probably was built about the middle of the twelfth century. The only remains of it consist of fragments of Barnack stone, worked with the Norman zig-zag pattern, that have been built into the walls of the existing church, which appears to have been entirely rebuilt in the fourteenth century. It is chiefly of flint. The tower, which has suffered less from restoration than any other part of the church, is embattled with stone, and is divided by three string-courses. Its chief points of interest are a newelled staircase, two fine gargoyles, representing grotesque heads of animals, while the dripstones over the windows in the upper storey show respectively the head of a man and of a woman —designs which are repeated in the dripstone over the west window in the belfry. Fourteenth-century windows, and a doorway of the same period, are preserved in the south porch, which has been otherwise extensively restored. The north and east portion of the chancel are of the Decorated period, and the south portion has been restored in the same style. The nave was greatly altered during the fifteenth century, when the present flat roof was substituted for the original high-pitched roof, and larger windows (six-light) were inserted in the walls. An octagonal font, with basin of Barnack stone and pedestal of clunch, is a respectable specimen of fifteenth-century work; and the monuments to the Alingtons and Audleys are interesting architecturally as well as historically.

In the seventeenth century the church "reformer" became terribly active. William Dowsing, as agent of a Parliamentary Commission, went about removing or defacing crucifixes, images, pictures, and inscriptions, and the church at Horseheath did not escape his delicate attention. Here he broke down two crucifixes, and destroyed apparently some six-and-forty "superstitious pictures." After these depredations, it became necessary to tidy-up with plaster and whitewash. This was done at Horseheath later in the seventeenth century, when the rood-loft staircase was removed, and the rood-loft doorways were blocked up and plastered over, the tower arch was blocked up, and a chamber for the bell-ringers was made by putting a floor in the tower midway up the tower arch, the lower part of the arch being boarded (a door being inserted), and the upper part of the arch filled in with masonry. It was probably at about this time that the windows in the south porch were blocked up; and it was perhaps in the same century that the gallery at the west end of the nave was erected, and the large canopied pew of oak (9 ft. by 6 ft.) was introduced. At the end of the seventeenth century, or perhaps at the beginning of the eighteenth, red brick was freely used in repairing the church, which therefore shows a red-brick embattled parapet, an unsightly brick buttress on the south side of the chancel, and a red-brick vestry. The chancel was restored in 1883, when the plaster ceiling was taken down, the roof retiled, and the south wall rebuilt. In 1891 the west gallery and the high pews were removed, and wood blocks were substituted for the brick flooring. The author deals in considerable detail with the furniture and monuments in the church, about whose rectors, also, she has collected many interesting particulars. The volume, indeed, while possessing all the informative value of an ordinary guide-book, is distinguished from that category by a certain vivacity of expression which shows that this is no perfunctory production, but that the writer is herself keenly interested in the subject.

All Saints' Church, Horseheath. By Catherine E. Parsons. Cambridge: At the University Press. Pages vi.+102, 9ins. by 5¾ins. Price 5s. net

Branscombe Church, Devon.

Another monograph by a lady is that on Branscombe Church, Devon, which Mrs. or Miss Edith K. Prideaux has "architecturally considered." This fine old church has been often considered thus. as well as otherwise; but the author of the present booklet is justified in this further attempt upon it by two fortunate circumstances; the first, and perhaps the more important, being her evident exceptional qualification for the task, and the second being the opportunity that occurred in 1911 of securing photographs and measurements of the church while it was under repair. For frontispiece there is a very interesting plan, which not only shows the church as it now exists, but also indicates, by means of varied hatchings, the chronology of its walls; and blank outlines represent walls that are no longer existing, of which either the foundations have been excavated, or other evidence of their former existence has been obtained: while the merely conjectured position of walls is shown by means of dotted lines.

The tower generally is apparently rather late Norman work. but some masonry in the lower part of its walls is supposed to be of much earlier date, as it shows pre-Conquest character; and there is other evidence that there was an earlier tower. During the 1911 restoration, the position of the original west wall of the twelfth-century nave was for the first time clearly disclosed, and the author has seized this opportunity of making some actual measurements and of formulating some that are conjectural with regard to the size and shape of the original church, which she thereupon supposes to have been of very ordinary Anglo-Norman proportions, the ground-plans of such churches being laid out on a system of squares and half-squares.

Five periods, ranging from the twelfth to "the sixteenth century and later," divide the booklet into a series of sho sections that are very convenient f study; the fittings and monuments bein separately considered. There are thirt seven photographic illustrations, each ar all possessed of unusual interest. A though the booklet contains less tha twenty pages of text, we think that should have been provided with an inde

Branscombe Church, Devon, Architecturally Co sidered. Illustrated with 37 photographs and pla By Edith K. Prideaux. Exeter: James G. Comm Pages 19+20 plates, 8¾ins. by 5¾ins. Price 1s. net.

St. Mary's, Cholsey, Berks.

The newer universities are very natu ally distinguished by newer methods study, some of which in course of tin will no doubt be thought worthy of ado tion by the ancient seats of learning, whi are at present in sore need of outsi stimulus to stronger endeavour to brea away from effete traditions. The exampl of London, Leeds, Liverpool, Mancheste and Birmingham must ultimately have th effect of compelling Oxford and Ca bridge to consider very seriously wheth it would not be wise, for instance, devote more earnest attention to archite ture, as a many-sided subject which o would have supposed to stand self-evide as a prolific means to culture.

The authorities of University Colleg Reading, seem to have discovered th potentialities of architecture as an instr ment of education. They are issuing series of volumes dealing with particul aspects of local history, with the view stimulating "public interest in the h tory of the locality," and of affording means by which the general historic teaching at University College may grad ally become connected with, and be illu trated by, the detailed evidence whi is furnished by local history." The boo that have been published in furtheran of this scheme include "An Analysis the Church of St. Mary, Cholsey, in t County of Berkshire." Its author is Doctor of Science of Oxford, and is Pr fessor of Zoology in University Colleg Reading, and the effects of his scienti training are evident not merely in the tit of his "Analysis"—which perhaps ten to risibility—but in the method steadi applied throughout the book. He h learnt—what some years ago certain ed cationists were almost frantically tryi to teach—namely, "How to Observe," a he applies rather remorselessly t methods of precision, which assured could not strike one as being strang almost to the verge of comicality unle they had been too generally neglected. It for the same reason, perhaps, that we do n feel quite certain that such methods can appropriately applied in all their rigo to such an elusive subject as architectu which, "in its quiddity," as an eighteent century philosopher would say, compris very much more than is amenable methods of exact ascertainment. Sti the incursion of the barbarians makes ul mately for strength; and the extreme scientific view may well serve as a whol some corrective to the vague and slop treatment towards which architectural d quisition too readily tends.

The author of this book, however, is n to be classed among the outer barbaria He has, indeed, a keen eye for beaut and also he is very genially tolerant of t pretty little fables which cling round old building like the lichen and ivy, the "mosses on an old manse," and ha no more and no less justification for the existence. But while he suffers the follies gladly, being himself exceedin wise, he is careful to let us see that he

ays loth to budge from the correct
ntific attitude. For instance, in re-
ding that, "It is locally believed, and
not impossible, that the foundations of
Saxon monastery may still be traced
he south of the church when the grass
ches in the summer, and that the resi-
ce of the Abbot of Reading was to the
h of the church," he is mindful to add,
footnote, that "In making these state-
nts one is doing nothing more serious
humouring local tradition." This
l of scientific over-cautiousness, how-
, usually has its compensation in an
ictedness of the scientific mind to a
ain suggestion of over-confidence in
uction. We are agreeably surprised
ind that on the whole our author is
mendably free from this infirmity;
hough there is perhaps just a twinge
t here and there in passages such as
concerning details of the south door
holsey: "First of all the entire order
ig-zag with its arch, although it has
there for some considerable time, is
sputably not original; and even if the
ssoir over the west cap appears to be
r, it is simply due to the fact of its
ng been cut out of a block of softer
e instead of the hard shelly limestone
which the others are composed. On
other hand, the hood mold, apart from
or two blocks of later work, is
uine, and has the convincing irregular
earance we should expect to find in
of this period. It consists at the
r margin of a serrated molding, then
ws a shallow hollow, and then finally
w of pellets. The tympanum I am
otful about. If it is original, it has
touched up with a modern chisel,
is in a surprisingly fresh condition for
fth-century work. There is a broad
l supporting six other blocks. The
ole ornament which it exhibits was cer-
y not all done by the same work-
, even if at the same time, the cen-
part of the pattern being quite differ-
from the lateral portions." The author
excuse us if we feel rather reluctant
ccept all the inferences contained in
rather typical passage. To mention
one: any argument from mere
hering is always to be received with
ion, not to say wholly distrusted. One
seen stonework not twenty years old
mbling to decay, and twelfth-century
as fresh and sharp as if it were a
of yester-year, or "as if it had been
hed up with a modern chisel." In
admittedly exceptional instances of
defiance of time, we have never felt
fied in inferring "a modern chisel."
in such matters that "analysis" seems
e less convincing than the broader
hods of synthesis, in which deduction
sed upon wide experience and the in-
on that is sometimes born of it.

r. Cole fails to find any evidence of
on work at Cholsey, but, on the con-
y, finds many grounds for holding that
oldest portions of the existing church
not antecedent to the twelfth century.
trust that in the foregoing very brief
ussion of his book we have not seemed
isparage it, for we have found it most
esting, and we can conceive of its
g in certain aspects very valuable. Mr.
has conducted his researches with an
nplary thoroughness which makes
other investigations of the kind seem
mparison superficial and perfunctory.
seems not only to have scrutinised
y detail of the building, but to have
ulted every available authority that
at all relative to exhaustive enquiry;
the drawings and numerous photo-
hic views appended to the volume render complete one of the most remarkable architectural monographs we have ever seen, and one that the student of early English architecture cannot well afford to ignore.

University College, Reading. Studies in Local History. An Analysis of the Church of St. Mary, Cholsey, in the County of Berkshire. By F. J. Cale, D Sc. Oxon., Professor of Zoology, University Cole, D.Sc. Oxon., Professor of Zoology, Oxford: B. H. Blackwell, Broad Street. London: Henry Frowde, Amen Corner. Reading: G. A. Poynder, Broad Street. Pages xiii.+62, 9ins. by 6ins., price 5s. net.

"ALEXANDRIA: ITS PLACE IN ARCHITECTURAL HISTORY."

In discussing Mr. G. A. T. Middleton's paper on this subject, of which an abstract was given in last week's issue, at p. 654—

Mr. R. G. Lovell (member of Council), who proposed a vote of thanks to the lecturer, said that the important discoveries which Mr. Middleton had made showed how necessary it was for them to keep their eyes open wherever they went. He had himself passed through Alexandria, but beyond the extremely interesting catacomb to which Mr. Middleton had referred, he was not at that time aware that there was anything of architectural interest in the place. He did not even know that there was a museum until he heard it from Mr. Middleton. The lecturer's deductions with regard to the home of the Corinthian order seemed to be exceedingly well founded. The evidence of Egyptian occupation was to be traced a good deal further up the Nile than Alexandria, as he remembered making a sketch of an Ionic capital at Luxor.

Mr. H. Freyberg, F.S.I. (London), in seconding the vote of thanks, said that scientists for the most part were so absorbed in their matter that they ignored the fallibilities of their audience. There was one question which arose in his mind as Mr. Middleton proceeded, and that was the question as to what had become of the remainder of the buildings of which vestiges had been found, and which, if existing at the present time, would be remarkable throughout the whole world. The answer to the question he thought might be found in the history of places like Venice, where, at the conclusion of a successful war, the conquerors made their opponents throw in, in addition to the war indemnity, certain shafts of precious marbles which were carried to the home of the victors. If, therefore, shafts could be taken, people with the tastes of the Venetians were not likely to leave behind the capitals; and in giving the Venetians credit for the west front of St. Mark's, they were probably giving them credit for the brains and artistic efforts of a people in far distant countries. No one, he thought, who designed the façade in question on paper would have put in so many shafts and so many capitals, and it was more than likely that they were added as they were secured from vanquished foes.

Mr. Robert W. Carden said he was waiting to hear Mr. Middleton refer to the architect who was supposed to have laid out the city of Alexandria on behalf of Alexander the Great. It was extremely hard, although quite usual, to find that his name was left out. So far as he knew, the architect was Dinocrates, and the city was founded, he believed, in 332 B.C. The employment of Dinocrates strengthened Mr. Middleton's argument, and the sketch of the Ionic capital which Mr. Middleton had made, followed by a photograph of the capital from the Temple of Diana at Ephesus, seemed to have some bearing upon the point.

Mr. Geo. E. Bond (President), in putting the vote of thanks to the meeting, said that Mr. Middleton had made a point of the fact that Alexandria from an architectural point of view had been neglected, and he entirely agreed with him; but he thought the reason was that Alexandria had other claims to distinction which were overwhelmingly obvious, and to a great extent overshadowed any claim it might have to be an architectural centre. Alexandria during the Ptolemaic period developed the exact sciences, and did so much for the establishment and development of what they might call modern civilisation, that they were now feeling its effects and were enjoying its results. When they considered the great names which were household words with them, such as Euclid, Archimedes, Hippocrates, and Ptolemy, who wrote a work upon Astronomy, giving the mathematical calculations of the heavens which lasted up to the time of Kepler and Newton, there appeared to be some reason for people not taking so much interest in it from an architectural point of view. Alexandria was founded just at the time when the imaginative Greek philosophy, which culminated in Plato, was giving way to the more practical and rising philosophy of his great pupil Aristotle, who, by the way, was for many years the tutor of Alexander the Great. At the present time they were reaping the benefit and following closely in the footsteps of the scientists, who to a great extent owed their fame to the great museum founded by the second Ptolemy Philadelphus, and to the great library the collection of which was initiated by Ptolemy Soter, the founder of the dynasty.

Mr. G. A. T. Middleton, A.R.I.B.A., in reply, said Mr. Bond was no doubt right as to how it had come about that Alexandria had been thought more of from another point of view than that of architecture. Mr. Freyberg's suggestion with regard to the disappearance of the major portion of what must at one time have been a very fine city was also probable, although it was only surmise. They knew that Alexandria was the centre of a most extraordinary contest between the Christians and pagans, leading to fight after fight, and eventually the conquering Christians absolutely destroyed all evidence of the previous pagan religion, and so the whole of the great City of Alexandria perished, swept away by successive fires. The discoveries made in recent years had only come to light through the reclaiming of the foreshore, and it was almost incredible that a curator of a museum had placed things of great archæological interest in his museum without letting Europe know. One would have thought that a French curator would at least have notified Paris, and thus ensured its report throughout the civilised world. There was not a word on the labels of any of the remains in the Alexandrian museum as to where it was found, or its probable date. In reply to a remark by Mr. Slicer, he did not intend to imply that the arch was not known to the Greeks or the Egyptians, but it was exceedingly rare, and he did not know of a case of a Greek capital being used in connection with the arch, although there was a strong suggestion of its having been used at Alexandria.

He had to thank Mr. Carden for reminding him of the name of the architect who laid out the city of Alexandria.

A DEFENCE OF BUILDING TRADESMEN.

Replying in the "Northampton Daily Echo" to some criticisms on building tradesmen, Mr. John Testin Wilson, builder's foreman, and teacher of geometry, carpentry and joinery, and staircasing and handrailing, makes a spirited defence of the tradesmen, and offers some interesting observations that are apparently the fruits of long and extensive experience.

"I am not," he says, "a builder nor a trades unionist. I must deplore the fact that the trade union officials do not urge upon their young members the necessity of acquiring that technical knowledge which is so essential in the practical application of their trades as I think they should; but notwithstanding that, I think it to be a very serious accusation to say that the trade unions in the building industry encourage the limitation of output. I have been a leading joiner and foreman for the past thirty years, and, therefore, have had every opportunity of being able to judge as to the capacity for efficiency in the performance of first-class work, and of the energy displayed by the workmen of the building trades of Northampton, and I can truthfully say that I have always been able to get a good shilling's worth of work for a shilling for my employers.

"A great crisis has passed over the business world at home and abroad. In this country it was no doubt aggravated by the disastrous war in South Africa. I, therefore, think it to be unjust to lay it to the charge of trade unions. . . Men are men, and, in good conditions, love their work as much as in any time of the world's history.

"The conditions are responsible, and not the men. I hold the architects in some measure responsible for the conditions. They send out quantities for tenders, which if it were not for the long-suffering and kind-hearted generosity of the builders they would often send back, and pray for a return of the architects of a former, but not distant, generation. They include all comers, and accept the very lowest tender, which is often from the man who gives what is complained of work in which no interest has been taken, because generally executed by the young and incompetent, who are hurried and worried along, to the detriment of all four concerned. The architect gets what he ought to expect, shoddy work; the builder gets what he deserves, a lot of worry and little profit; the poor young and inexperienced workman gets what he can, but never full wages, unless he be foreman, when he may reach that altitude; and the client gets what he ought to expect in the business market when he wants a lot for a little, quality in equal ratio to the price.

"Results would be far different if the architects as a body would accept only the tenders of good substantial builders (whom they all know), whose prices are based on years of experience, and which give a fair remuneration as interest on their capital and wages for their labour as well as fair wages for their workmen, and sufficient time for them to exercise that skill and patience which are so necessary for the execution of good work which gives joy to the workers, pleasure to the architect, and satisfaction to his client.

"Neither the architect nor the builder is responsible for the cramped condition of the houses of the working-classes; it properly lies at the door of the landowner. How is the architect or the builder to design or build other than cramped houses when the land is 1s. 3d. per superficial foot? I wish the workingman of Northampton would take a two-foot rule into some field and measure a square foot and look at its tiny size, and then think that if he wished to buy enough to build a cramped house he must work 2,680 hours without stopping to eat or sleep before he could purchase the ground.

"The Northampton builders, as a body," Mr. Wilson declares, "are some of the best and most competent in the country, and works have been executed by them in all parts to the entire satisfaction of some of the best architects in the Island."

LONDON BUILDING TRADE LABOUR MOVEMENT.

It is stated that the various carpenters' and joiners' societies and furnishing trade and cabinetmakers' societies in London have recently made a number of important alterations in their working rules for the London district, and that notice of them has been sent to the London Master Builders' Association. The most important of the proposed new rules stipulate for an increase of 1½d. an hour in wages, bringing the minimum rate to 1s. an hour; a reduction of the working hours in summer from 50 to 47 each week, the winter hours to remain at 44 each week as at present; and double payment for overtime. Six months' notice has to be given to the master builders to terminate existing rules, and it is suggested the new proposals should come into operation on June 8th, 1912.

The negotiations which led up to the new demands, and the position generally, were explained to a Press representative last week by Mr. S. Stannett, district secretary of the Amalgamated Society of Carpenters and Joiners, and Mr. Alexander Gossip, general secretary of the National Amalgamated Furnishing Trades' Association. They stated (so runs the report) that in the first instance the London Building Industries Federation and the branches were asked to send in suggested alterations, and their suggestions, afterwards embodied in the new rules, were agreed to by an almost unanimous vote of the union members of the trades affected.

Asked if it was thought there was a probability of a strike, the reply was:—"No. We have a very good opinion of the members comprising the London Master Builders' Association, and have no reason to doubt that we shall arrive at an amicable arrangement. We know that the employers themselves are perfectly well aware of the increased cost of living, and that it is absolutely necessary that the standard of life should be in no way reduced. They know from experience that the better paid class of workmen are, without exception, the best producers.

"We consider that the reduction of hours is a question of supreme and vital importance in these days of speedier methods of production, with a consequent increase in the ranks of the unemployed. That is recognised by every thinking man to be one of the greatest evils which we have to cope with in this country. It is a well-known fact that the firms who have adopted the shorter working day are in a much better position to compete than those who work the longer hours. This we have on the authority of many of the large employers themselves. . .

"We think there will be very little difficulty on most of the jobs in arranging for two shifts of men. This would be to interest of both parties, as it must obvious that men would relatively acco lish more work, and a better quality work in eight hours, than when they working twelve hours, for which they ceive an extra rate."

LONDON ASSOCIATION OF MAST DECORATORS.

The London Association of Ma Decorators has been active in protest against certain provisions of the Natio Insurance Bill, and we understand the Association would have taken in pendent steps earlier, but were rely upon two resolutions passed by National Association of Master Ho Painters of England and Wales at th recent conference, but which were af wards considered irregular.

At the last meeting of the London A ciation, the matter was discussed, and fear was expressed that it was then late to take any effective action in matter. As, however, there was a una mous opinion that no pains should spared to oppose the measure, the Se tary was authorised to do what he co and both he and Mr. Dakin, the vice- sident, were present at the meeting the Cannon Street Hotel.

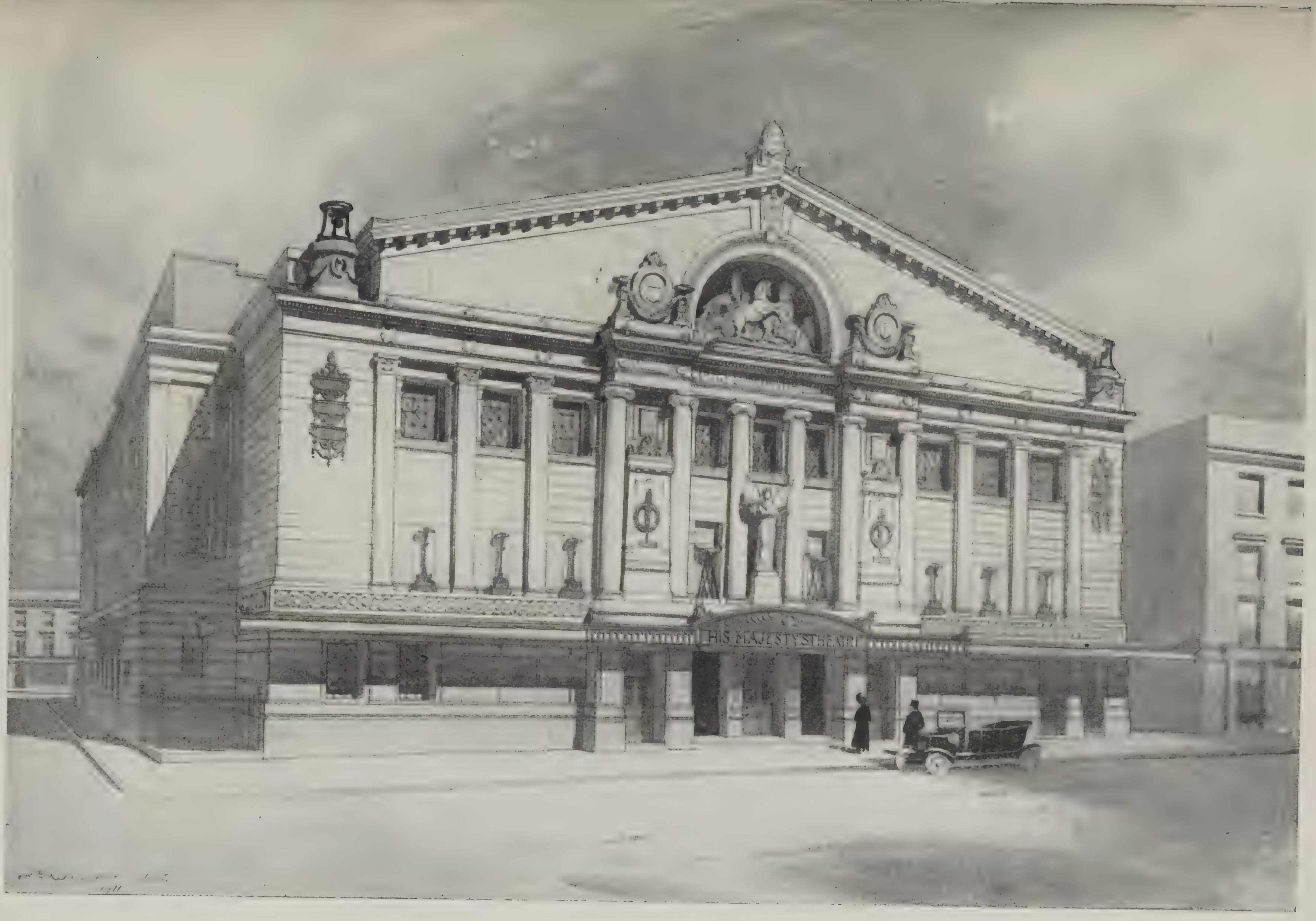
Various other matters of importa were dealt with at the last commi meeting of the Association, including election of several new members. secretary also intimated that he had sig on behalf of the Association a memo to the Prime Minister praying for cer alterations of the law with relation picketing at strikes, and other matter connection therewith. It was resolved strengthen the memorial by obtain from the members of the committee ste ments of their personal experiences of conveniences caused during the rec railway strike.

The Education Committee is still negotiation with the L.C.C. on the s ject of the better training of decorat and good results may soon follow.

HIS MAJESTY'S THEATRE, MANCHESTER.

This new theatre, which is intended the production of high-class dramatic p and operas, will be the largest theatr Manchester. It will be erected in Q Street, on what is practically an isl site, in the theatre zone of the city. architects have based their design on works of the "English Classic" schoo the late eighteenth and early ninete century. All the exits and entrances grouped to form part of the internal des as well as to conduce to the safety of public. Careful study has been devote the design of the stage, and unique lab saving devices will be a feature of working part of the house. In this nection the architects are fortunate being in a position to avail themselve the advice of Mr. Francis Neilson, M. who is one of the highest authorities stage equipment. It is understood that building will begin during January, and probably finished early in the lowing August.

Mr. Horace Farquharson and Mess Richardson and Gill, of London, W. are the associated architects for building. It may be mentioned that are also designing the open-air thea medical baths, and kursaal to be erecte Hastings.



HIS MAJESTY'S THEATRE, MANCHESTER: FACADE TO QUAY STREET.

HORACE FARQUHARSON AND RICHARDSON AND GILL, ASSOCIATED ARCHITECTS.

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THE WONDERFUL HALF-CENTURY."

rom the admirable paper entitled oughts on Jacobean Architecture," ed by Mr. Arthur T. Bolton, F.R.I.B.A., re the Architectural Association on ember 27th, we venture to condense a more observations. As to Chilham tle, the lecturer remarked that the cture is differentiated from a simple itional house by a unity of con- ion arising from the deliberate otion of a complicated hexagonal n, having an evident intention of ting a court effect at the back, ble by means of the open sixth of the hexagon. The plan, more- , shows the study of the outcome of use of the hexagon, because the ex- led front and the management of the t and left wings are calculated to iate any defects of the bare geometrical n. We have here, therefore, something h more complex than the triangle of gford Castle, or the symbolic trinity Rushton Lodge, or the geometrical ies of John Thorpe's book; and Mr. ton drew attention to the significance the fact that the pentagonal for- s palace of Cardinal Alexander nese, which circumscribes a circular rt, was completed in 1549. Inigo es in Italy in 1604 would doubtless hear about it, even if he never saw it, as one he remarkable works of the last half- tury, and many have been led to ex- ment with a further development of plan. Mr. Bolton, by a comparison details, showed that it is difficult to id the conclusion that the entrance of Chilham is a tactful revision of the ous frontispiece of Bramshill.

St. John's College, Oxford.

Vith regard to the famous second quad- gle of St. John's College, Oxford, in- ling the lovely garden front, there was, author thought, no real ground to bt Inigo Jones's authorship, and there ned to be no reason to refuse the orship of the Porch of St. Mary the gin to him as well. No matter what ists might say, this work is a gem that a master could produce.

St. Catherine Cree.

Ir. Bolton thought that the church of St. herine Cree seems to show the hand of go Jones. The ecclesiastical policy of rles and Laud, steering between Rome Geneva, required precedents of a ognisable English character. These i-Gothic churches are more typical of age than St. Paul's, Covent Garden, re the design is related to that of the zza, in which it stood. In the existing altered chapel of Lincoln's Inn, and he church of St. Albans, destroyed in Great Fire, we have examples of go Jones's handling Gothic architecture.

Kirby Hall.

t Kirby Hall, 1638-40, we find Inigo es completing the work of his pre- essor, John Thorpe, 1570-72. The ning is an improvement on Thorpe, the loggia with the stairs at each end st have been very effective. In the den court beyond are two quite Pal- an doorways that only Jones could e done at that date.

"Mechanical Panelling."

he architects of the Perpendicular k in England knew what they were ut when they used throughout a sys- of panelling that we often hear un- dingly stigmatised as mechanical. The author thought that the continued attempt to this effect in the rebuilt Jacobean quadrangle of the Bodleian at Oxford was most instructive.

It is certainly true that the study of Elizabethan and Jacobean architecture has been prejudiced by the excessive attention given to its often ill-regulated ornamentation; as, for instance, in Richardson's works. There is nothing in the repeated and monotonous patterns of greater complexity than interest or refinement—grotesque work in many cases that verges on the lower forms of Oriental and savage imagery.

Naturally, if we adopt only a standard of decorative design, such as we see in, say, King's College Chapel screen at Cambridge, where the level of the original examples, such as we may see at Perugia and Verona, is reached, then the great body of Jacobean detail must strike us as coarse and debased.

Jacobean work varies enormously, fluctuating between the fretted, bossy, intricate, and involved types that prevailed in Elizabeth's reign, and better models inspired by the increasing tendency towards ideals of classic grace.

Aston Hall.

In Aston Hall, 1618-35, the gallery ceiling is worlds apart from the remainder of the house, and even from the frieze immediately below it. The same is true of the panelling and wood-work of those great houses, which, at times fussy with multitudes of arcaded panels, now and again seems an anticipation of the simple moulded work that would later on supersede it. For the complete picture of the Jacobean house we need to reassemble the furniture, plate, tapestries, pictures, and dress of the period. The Burleigh portrait of Elizabeth and her jewelled personal belongings there preserved give us a clue to the all-round decorative aspect of the age.

Classical Detail.

Finally, we may well be careful in ascribing mere ignorance to some of these Jacobean architects as the motive of their handling of classical detail. There will be found in the best of it a wit and humour of treatment which implies knowledge, observation, and thought, and is as legitimate as any other form of fancy or burlesque. It stands to reason that it can only be attempted with success by those who are masters of their subject-matter. The actual degree of refinement is in the discretion of the artist, and it will be a reflection of the taste of the age.

Conclusion.

We do an injustice to this half-century if we are alive only to its materialistic pomp. The misery and bloodshed of the Civil War affects us like the closing scene of a great fire, when the stately building falls with a crash, and the whole sky is reddened with the reflected glare. The conclusion of the whole matter is that we inherit from this half-century some unique and lovely English homes, and derive therefrom a pleasure that is certainly no mere outcome of sentimental associations.

Proposed Municipal Crematorium in Edinburgh.

A lecture on cremation has been delivered under the auspices of the Edinburgh Cremation Society by Mr. William Hume, and at its close among the resolutions was one to the effect that a crematorium for Edinburgh and district should be erected under municipal auspices.

AN EMINENT STRUCTURAL ENGINEER.

Sir John Wolfe-Barry, whose works, such as the Barry Docks and the Tower Bridge, to mention only two among many, have made his name a household word, has just recently celebrated the completion of his seventy-fifth year. He is the son of the late Sir Charles Barry, R.A., the architect of the Houses of Parliament. Sir Charles had five sons, of whom Sir John is the youngest. With the exception of one who died young, all made their mark in the world. Charles, the eldest, became President of the Institute of British Architects; the second son, Alfred, became Bishop of Sydney and Primate of Australia; and the third, Edward Barry, became, like his father, a Royal Academician. A representative of the "Morning Post" had a long conversation with Sir John on the events of his life.

In Defence of the Tower Bridge.

"Of course," Sir John is reported as saying, "I am aware that the Tower Bridge has been criticised in some quarters, but I think that this has been due in large measure to a misapprehension. In particular, architects have twitted me with the fact that the interior of the towers, which look like solid stone, is in reality of steel. Nowadays a combination of steel and masonry for ornamental purposes is quite common, but this was not so when the Tower Bridge was built. But if the architects have criticised me I think I may say I have had the artists on my side. It is important to bear in mind that I was bound to make the bridge harmonise more or less with the Tower of London. For the purpose of making the northern approach we had to take land within the precincts of the Tower, and this fact gave the Crown a controlling influence in the carrying out of the scheme. Queen Victoria took a deep personal interest in it, and she had all the plans and designs submitted to her. It was her Majesty's own idea that the view of the Tower should not be spoiled by the erection close by of a structure out of keeping with its main architectural characteristics. The Tower Bridge has had a marked effect on London traffic, by relieving the other bridges of the Metropolis from a very large number of the heavier kinds of vehicles. In my view the erection of the proposed St. Paul's bridge would be a waste of money. The congestion of traffic is not to be seen on the bridges, but in the narrow streets leading to them. There is heavy traffic on Blackfriars Bridge, for example, but if you take a cab across it you will rarely be stopped on the way. The block occurs in Queen Victoria Street or on Ludgate Hill."

The Triumph of Steel.

"The mention of the steel used in the Tower Bridge reminds me of the tremendous extension in the use of that metal in my time. When I first became engaged in contracting work, hardly any was used at all. It was all wrought or cast iron. Naturally the advantage has been very great from the point of view of the public safety. It was the cheapening of steel by the Bessemer and Siemens processes that brought steel into general use, the expense previous to this having been almost prohibitory. One result of this change has been that far greater engineering feats have been accomplished than ever before in the history of the world. The Forth Bridge would never have been constructed of iron. Iron would not have stood the terrific strain. In this matter of great feats of engineering England does not by any means stand alone.

Still, I think that at home John Bull holds his own, and that he more than holds is own against the whole world in far-off countries.

Technical Education.

"But he would have been hopelessly outstripped in the race but for the increased facilities for acquiring technical education. In my early days such facilities were extremely limited. As President of the Institution of Civil Engineers, I induced that body to set up examinations for admission to membership. With the institution of the examinations facilities have naturally sprung up for obtaining the technical instruction necessary to pass them. That is the great virtue of the examination system. In this connection the highest praise is due to the City Guilds for the public spirit they have shown. I need only mention the City and Guilds of London Institute, in connection with which I hold the position of Chairman of the Executive Committee. The City Companies have subscribed an enormous sum—close on a million sterling—for the promotion of technical instruction, chiefly engineering. Another thing which I did in my capacity as President of the Institution of Civil Engineers was to start the Engineering Standards Committee. The benefit to trade of the labours of the Standards Committee must amount to several millions sterling a year."

[With reference to this article, which, as already stated, appeared in the "Morning Post," Miss Horatia Jones writes to that journal to the following effect: "Without for a moment wishing to detract from the share Sir J. Wolfe Barry had as engineer in the construction of the bridge, may I point out that the originator of the design was my father, the late Sir Horace Jones, City Architect? The bascule principle was his idea, and I have the original pen-and-ink designs in my possession. His name as architect can be seen on the foundation-stone of the bridge. My father died in 1887, before the bridge was completed."]

CORRESPONDENCE.

The Editors disclaim all responsibility for the statements made or opinions expressed by correspondents.
Correspondents are asked to be brief, and to write on one side only of the paper

National Insurance and the Building Trade.

To the Editor of **THE ARCHITECTS' AND BUILDERS' JOURNAL.**

SIR,—I have been hoping and expecting some Member of Parliament understanding finance and business, or some leading member of the builders' societies, or one of my own profession who is a leader in the practice of architecture as well as the art of it, would take up with vigour and ability the matter of the National Insurance Bill of the Government, showing how it would affect the great business of building in this once flourishing country of ours. But there seems no stir. All are expecting, I suppose, it will "pan out all right" as usual, without "fussing."

I write solely with a view of getting some able man amongst the whole of those engaged in the building trade, including of course architects who get their livelihood from it, to devote some of his ability to the great subject before it is too late.

Would not all of us agree that the last few years have been very bad ones for the generality of architects and all connected with the building trade? Is it not a fact that architects as a profession have had less work in their offices? Is it not also a fact that builders find it most difficult, in ordinary building competitive estimating, to obtain a contract giving fair and reasonable profits? Or, in other words, is it not a reality that competitive estimates are cut so low as to leave no profit to contractors if the contract is needed so as to keep the shops going, waiting for better times?

The reasons for all this are probably manifold. . . If the above is to-day the condition of the building trade, with the want of confidence in financial circles, whence must come our employment, what will be the state of things if the National Insurance Bill becomes law? Is it thought likely the working classes will quietly have threepence or fourpence taken weekly from their wages, possibly for their own benefit, but certainly for the benefit of the unfortunate ones? There will be strikes and threats of strikes against any deductions, which even in the very best results must make builders' expenses greater than ever. Thus are the expenses of buildings increased, which in plain English means there will be fewer buildings erected, reacting to the detriment and loss of architects, builders, and workmen.

In this Insurance Bill the workpeople provide a part, the employers a part, and the State a part. "The State" is only the taxpayer, and the biggest taxpayer individually is the employer, so the employer pays two parts. It will end in the employer paying the three parts; but if he pays in the main only the two parts, the cost of building by him must necessarily be increased. Less building will ensue in any case. . . .

The National Insurance Bill means that another big Government liability fund is created, which will still further reduce the value of Consols and Governme "securities," and will remove millions money from industrial enterprise. Mone that could be invested in England is natu ally going out of England—driven out to our loss. . .

Will not some energetic and able ma take up the subject, or will not son enterprising building newspaper use power, to have a comprehensive, clea definite protest made by the entire pr fession and trade against this extra burd being laid on business enterprise?

I appeal to you, the architectural pr fession, and the building trade generall to be doing something before it is too la and to make our united voice heard.

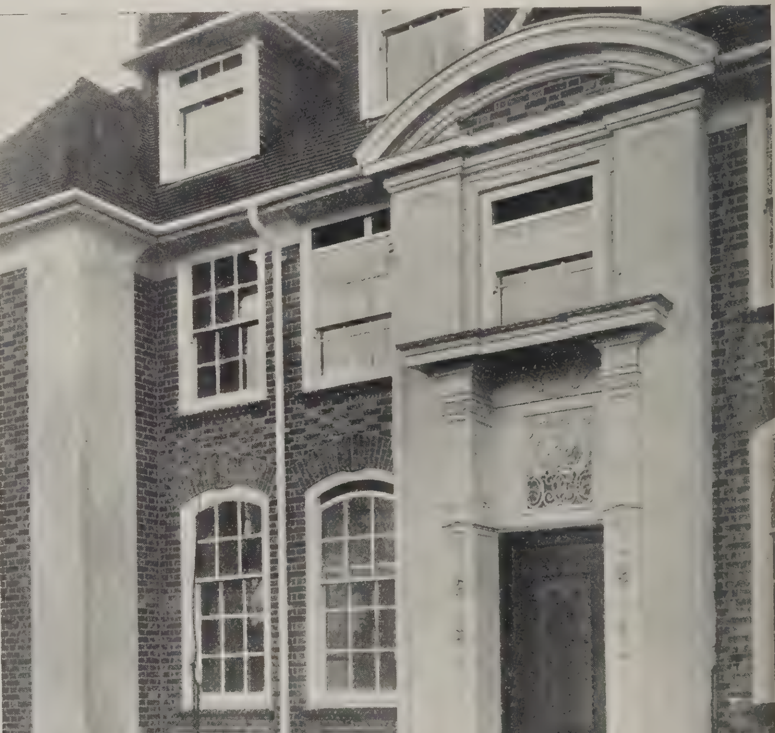
CHAS. HEATHCOTE.

110, Cannon Street, E.C.

[We have been compelled to omit p tions of this letter. Correspondents a requested to be brief; and we must a them to remember that this Journal not an organ of political opinion. Wh this letter was in the hands of the printe the National Insurance Bill received t Royal assent. The fact, however, that t Bill has become an Act does not preclu amendment, and therefore our correspon ent's protest, and the action which urges upon the architectural professi and the building trade, are not "too lat There is every indication that an amen ing Act is certain to be brought forwa at an early date.—ED.]

The Proposed British Academy in Ro

The Roman City Council have unanmously approved Mayor Nathan's gr to the British Government of the site the British Pavilion in the Valle Giu for the proposed British Academy Archæology, Architecture, and Art.



HOUSE AT FARNHAM, SURREY: FRONT ENTRANCE.
HAROLD FALKNER, ARCHITECT.

NEWS ITEMS.

Street Names on the Pavement.

he Kensington Borough Council has n considering a suggestion that the nes of streets should be let into the ing of the footway at street corners. A mittee which has considered the matter k that such tablets may be of some antage to pedestrians, but of little assis- ce to vehicular traffic, and that tablets buildings and lamps will be more ful.

reet Lighting in the City of London.

he Streets Committee of the Corpora- have submitted a scheme for lighting streets in about equal proportions by and electricity by means of centrally g lamps as far as practicable. This l effect an annual saving to the rate- ers of about £6,800 and an increase illuminating power of about 610,000 dles. It is suggested that the scheme uld be carried out by the Gas Light l Coke Company and the City of Lon- Electric Lighting Company (Limited).

London Guildhall Extension.

lans have been approved for enlarging Guildhall buildings to provide addi- al accommodation for the Lord yor's Court and the Art Gallery. All buildings in the Guildhall yard are to destroyed, and a new structure har- nising in design with the architecture the Guildhall will be erected in their ce. On the west side a similar build- will also be erected. It is estimated t the extension and improvement will t £50,000, and it still remains for the urt of Common Council to grant the ney.

Edison's Concrete Furniture.

Ir. Thomas Alva Edison has announced t, following his discovery of how to ld a concrete house at a fifth of the ual cost by pouring it into a mould, he been able to manufacture concrete niture as durable as any wood, and at f the present cost. Mr. Edison promises hin a few months to prove that a couple l be able to acquire a residence such as v costs $5,000 in the United States and it with furniture now costing $500 for otal expenditure of $1,250. "I shall be e," he said, "to sell a whole bedroom for five dollars."

A Test with Fireproof Doors.

Ve are informed that the fireproof doors nufactured by Art Metal Construction neo), Ltd., 26, Holborn Viaduct, E.C., e tested by the British Fire-Prevention mmittee on December 13th, at their ion at Regent's Park. A full report of test is now in course of publication.

Artificial Limestone Blocks.

rtificial limestone blocks for the new nforced concrete hospital at Coney and, New York, were made at the con- ctor's plant near by and taken to the in cars. In the manufacture of the ne, clear white pine patterns were first de to correspond in detail to the full- drawings. These patterns were then ressed in a wet sand mould and, when noved, a matrix of grout was poured. is grout consisted of one part Portland nent to two parts of aggregate, consist- of one part of marble dust and the nainder limestone, graded from $\frac{1}{8}$ in. to n. The stones were left for four days, then were hoisted from the moulds and cured in the open air, covered by a layer of canvas, which was kept well wet. They were then cleaned and finally finished on a rubbing bed. All the walls are of interlocking hollow-tile bricks.

Northern Polytechnic Institute.

Mr. Hugh Davies, after a number of years as head of the architectural and building section at the Northern Polytechnic Institute, is leaving to take up a Government appointment as Inspector of Technical Schools. It has been decided to show him how much his work has been appreciated by entertaining him at dinner at Beale's Restaurant, Holloway Road, on January 13th. Old students or other friends who would like to be present are asked to communicate at once with the hon. secretaries, Mr. Harold F. Walker and Mr. Harold T. Cooksey.

Khartum Cathedral.

The altar furniture that has been given to All Saints' Cathedral, Khartum, has been on view at Messrs. Barkentin and Krall's, Regent Street, London. The furniture consists of a silver pyx and cruet and a cross, a pair of standards, a pair of vases, and a pair of candlesticks, all of brass. The cross, candlesticks, and vases are made to the designs of the cathedral architect, Mr. R. Weir Schultz, and are of Eastern design. The cross is encrusted with amethysts, carbuncles, topazes, and crystals, and has a figure of Christ in the centre made of silver. The vases are also encrusted with the same jewels.

Memorial to Sir William Quiller Orchardson.

Representatives of every phase of modern art have subscribed to the memorial which is to be provided of the late Sir William Quiller Orchardson, and it is understood that, with the permission of the family, the memorial will be a reproduction of the bust of the artist which was made by the late Mr. Onslow Ford, R.A. It is hoped that the memorial will be placed in the Tate Gallery. It is proposed to erect a memorial tablet in the Artists' Corner of the Crypt of St. Paul's Cathedral. The Dean has given his consent to this. Mr. W. Reynolds-Stephens has been asked to design the tablet.

Town-planning in Scotland.

Under the auspices of the Scottish Advisory Committee on Town-Planning, a conference was held last week on national housing and town-planning in the City Chambers, Glasgow.

Sir George McCrae said the Local Government Board as the central authority on town-planning was anxious to help local authorities in the matter. The Town-Planning Act was an instrument of great power, but to be effective it must be put into operation, and perhaps the burghs and counties with Scottish caution wanted to look round before committing themselves to a definite policy. The Board, however, were extremely gratified at the progress that had been made. Sixteen local authorities were in communication with the Board in regard to town-planning schemes, and seven others were being initiated by private individuals or syndicates. There was something more wanted. They wanted the co-operation of the landlords. He put it to them as a business proposition whether it would not be better for them to adopt the merchant's maxim of "small profits and quick returns." By selling their ground at a cheaper rate they would get a quicker return and a fair price, and would do a great deal to ensure the physical efficiency of the race.

An address was delivered by Mr. Henry R. Aldridge, secretary of the Housing and Town-Planning Council, and discussion followed.

The Holyrood Memorial.

The executive committee appointed for the Holyrood Memorial to King Edward met on Wednesday last week in Edinburgh when it was agreed that £15,000 should be spent on the memorial. If subscriptions exceed this amount the scope of the memorial will be enlarged. The committee decided to invite seven Scottish architects to send in designs.

Memorial Hall for Kilmacolm.

On behalf of himself and the other members of the family of the late Mr. George Jardine Kidston, of Finlaystone, Mr. Glen Kidston has offered the kirk session of Kilmacolm the sum of £2,000 to be applied for the erection of church halls in memory of their father, who was a member of the parish church for many years, and took a keen interest in its welfare. Mr. J. J. Burnet, A.R.S.A., has been appointed architect, and the kirk session are seeking for a suitable site.

OBITUARY.

M. Honore Daumet.

The death of M. Daumet was recorded in last week's issue. It may be remarked here that M. Daumet's chief executed work was the modern portion of the Château of Chantilly, to a great extent a rebuilding of the ancient château, all except one pavilion of which was destroyed at the time of the revolution. His buildings there are exceedingly fine, in excellent keeping with the remaining ancient work without affecting to be an archæological revival; and there is a great deal of fine decorative detail in the interior work.

Mr. George Gordon Hoskins, F.R.I.B.A., of Darlington.

Mr. George Gordon Hoskins, who died recently at his residence, Harewood Grove, Darlington, at the age of 74, was a borough and county magistrate, and was for several years a member of the Darlington Town Council. He had designed a large number of churches, chapels, banks, and various public buildings in the Darlington and Middlesbrough districts, including banks at Sunderland, Bishop Auckland, Middlesbrough, Barnard Castle, and Thirsk. At Darlington he prepared the plans for the Queen Elizabeth Grammar School, the Edward Pease Public Library, the Hospital, and other public erections. He also designed the Hartlepools Exchange at West Hartlepool, but his greatest achievement was the Middlesbrough Town Hall and Municipal Buildings, which were opened some 22 years ago by King Edward, then Prince of Wales, and cost £120,000. Mr. Hoskins was a godson of the late Duchess of Gordon, who died in 1864. He was educated in private schools in London and Paris, and became a pupil with Mr. W. D. Haskoor, architect, of Great George Street, Westminster. It was in London that Mr. Hoskins commenced to practise, but he removed to Darlington in 1864. He retired from practice in 1907, being succeeded by his brother, Mr. Walter H. Hoskins, of Darlington. Mr. Hoskins was twice married. Besides being a Fellow of the Royal Institute of British Architects, he was for two years President of the Northern Society of Architects.

MR. ANDREW LANG ON SPADE-WORK.

In the course of a brief notice in the "Morning Post," of Mr. Ward's book on "Romano-British Buildings and Earthworks," Mr. Andrew Lang remarks that all excavations of ancient centres of life has a certain amount of excitement for the digger. But except to the specialist in house-building, fortification, and history, no digging is so destitute of pleasurable emotions as the "howking up" of Roman sites in Britain. The contents are, he says, as a rule, stereotyped. The altars and coins are of this or that legion, of this or that Emperor. They may prove or disprove a point for the minute historian of the Roman War Office; as at Newstead, they may settle problems about the Roman tenure of Scotland, but seldom, as at Newstead, do you discover objects of æsthetic interest. The amateur thinks that every ancient rectangular entrenched enclosure in our Isles is Roman. It is not so; if it were, there is a splendid huge Roman camp near Killarney. Only the specialist, says Mr. Lang, cares for "plan and sections of a latrine," or "probable site of a staircase," or for "channelled and composite hypocausts." The mosaic pavements are about as interesting as our own to the student of decoration. "The courtyard was paved and had a marginal stone gutter with an outlet into a drain in the lower left hand corner, while in the opposite corner was a well." These facts are acquired for history, "but they do not amuse," as the poet also says. One is sorry that if Professor Bosanquet's reconstruction of a portico be correct this "renders the gutter behind meaningless." The Romans did not make meaningless gutters behind, but the Philistine is content to believe that the gutter had a meaning. "The gutter implies a roof."

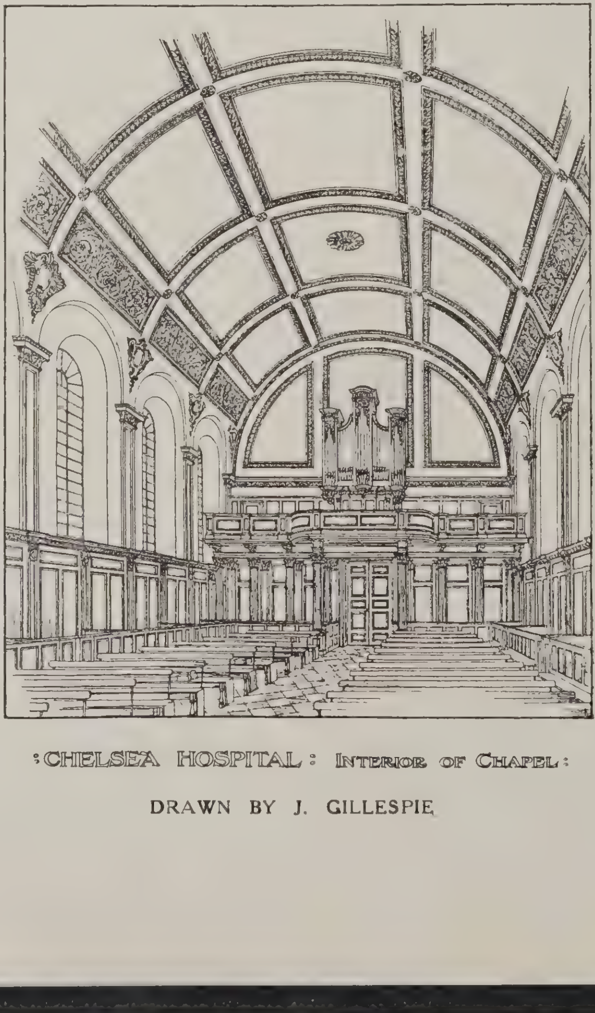
ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

The annual general meeting of this Institute was held at the rooms, No. 31, South Frederick Street. In the absence of the President, Mr. Caulfeild Orpen, B.A., F.R.I.A.I., occupied the chair. The hon. secretary read the report of the Council for the year 1911. A discussion ensued regarding several of the matters referred to, and the report was adopted. The hon. treasurer, Mr. F. Hayes, submitted his statement of accounts, showing that the Institute continues to be in a sound financial position. The Chairman read the report of the scrutineers of the ballot for the Council, and declared the following gentlemen duly elected for the year 1912:—Messrs. C. H. Ashworth, G. P. Sheridan, J. H. Webb, L. O'Callaghan, F. G. Hicks, H. Allberry, W. Kaye-Parry, A. G. C. Millar, W. A. Scott.

DETAILS, OLD & NEW.—XXXV.

Woodwork in the Chapel of Chelsea Hospital.

The woodwork is the chief feature of the chapel of Chelsea Hospital, which was designed by Wren. It is of oak throughout, and the enrichments are vigorously carved. The panelling around the nave is relieved by pilasters having a cherub's head at the top; one of these is illustrated on the opposite page. The panelling around the chancel consists of an order with attic above. The general scheme is shown by the accompanying perspective view. The drawings reproduced in this issue form part of the set which gained for Mr. Gillespie the Banister Fletcher Bursary of the Architectural Association some years ago.



:CHELSEA HOSPITAL: INTERIOR OF CHAPEL:

DRAWN BY J. GILLESPIE

SOCIETY OF ARCHITECTS.

The second ordinary meeting of t Society of Architects for the session 191 1912 was held at 28, Bedford Squar W.C., on December 14th, 1911, the Pres dent, Mr. Geo. E. Bond, J.P., in the chai Ten nominations for membership and ni for studentships were announced. T ballot was then taken, and the followi candidates were declared to be du elected :—

As Members : **Barker**, F. W. C., Londo **Benwell**, W. R., London; **Blackmor** A. C., Hull; **Bromly**, Alan, Croydo **Catling**, F. R., London; **Chilton**, E. Eastbourne; **Cooke**, F. G., Eastbourn **Crickmay**, G. H., Leigh-on-Sea; **Davi** W. G. Birkenhead; **Ellis**, H. O. Lo don; **Hall**, Annie, London; **Hanso** S. C., Southall; **Haymes**, R. E., Shrewbury; **Johnson**, W. H., Wigan; **Jon** J. H., Swansea; **Keay**, W. H. L., Londo **Leete**, H., Huntingdon; **Lester**, J. M Harrow; **Peters**, K., Galway; **Pickerin** J., Canterbury; **Picton**, C. J., Char **Rayson**, T., Oxford; **Shail**, W. C., Lla daff; **Swanston**, J. D., Kirkcald **Whitaker**, V. S., Burnley; **Whitin** F. E., London; **Williamson**, H. B., As ford.

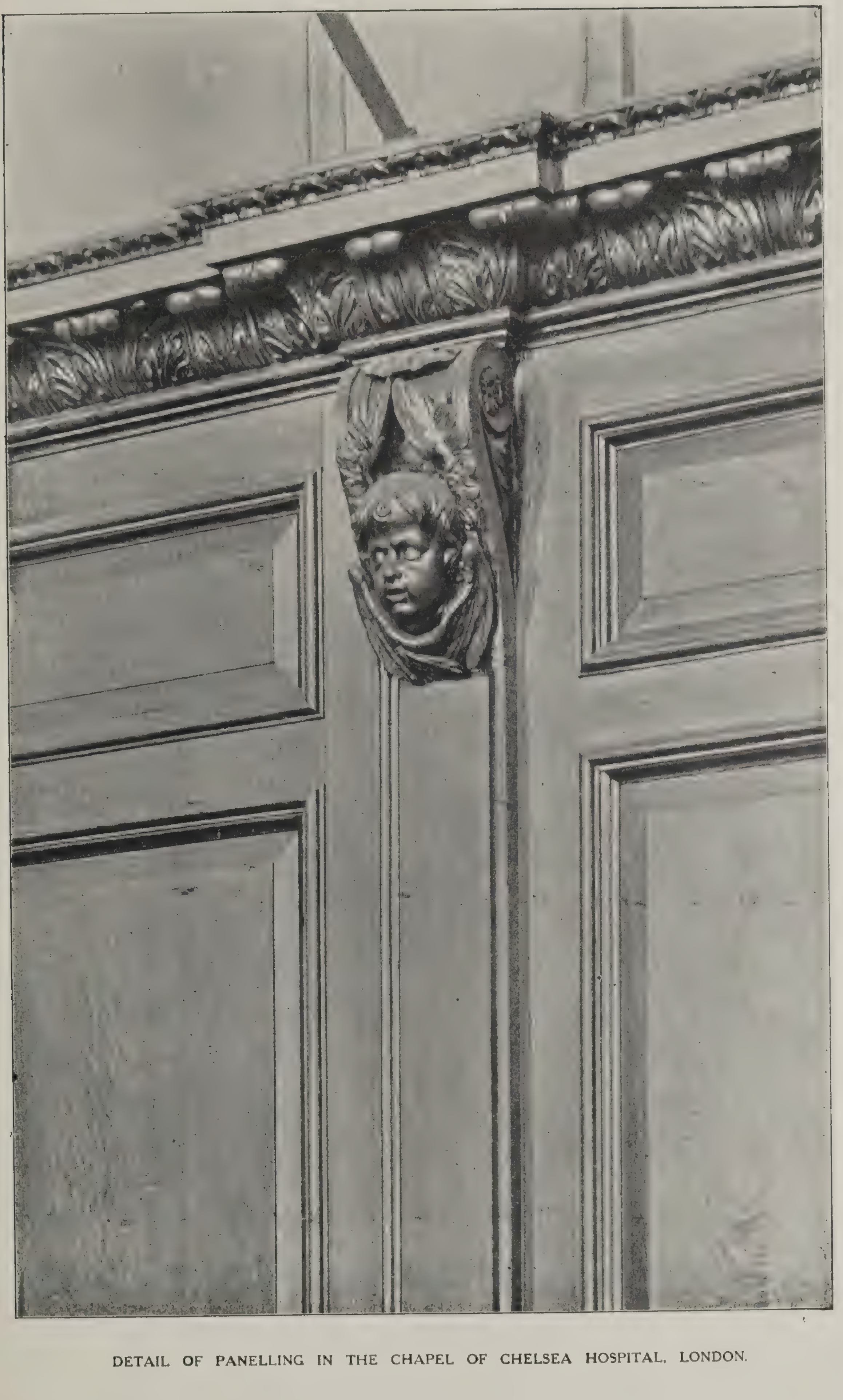
As Students : **Gomm**, J., Ealing; **Kee** E. E., Norwich; **Ryan**, B. J., Londo **Soulby**, A. C., London; **Thomas**, D. Llangadock.

LEGAL.

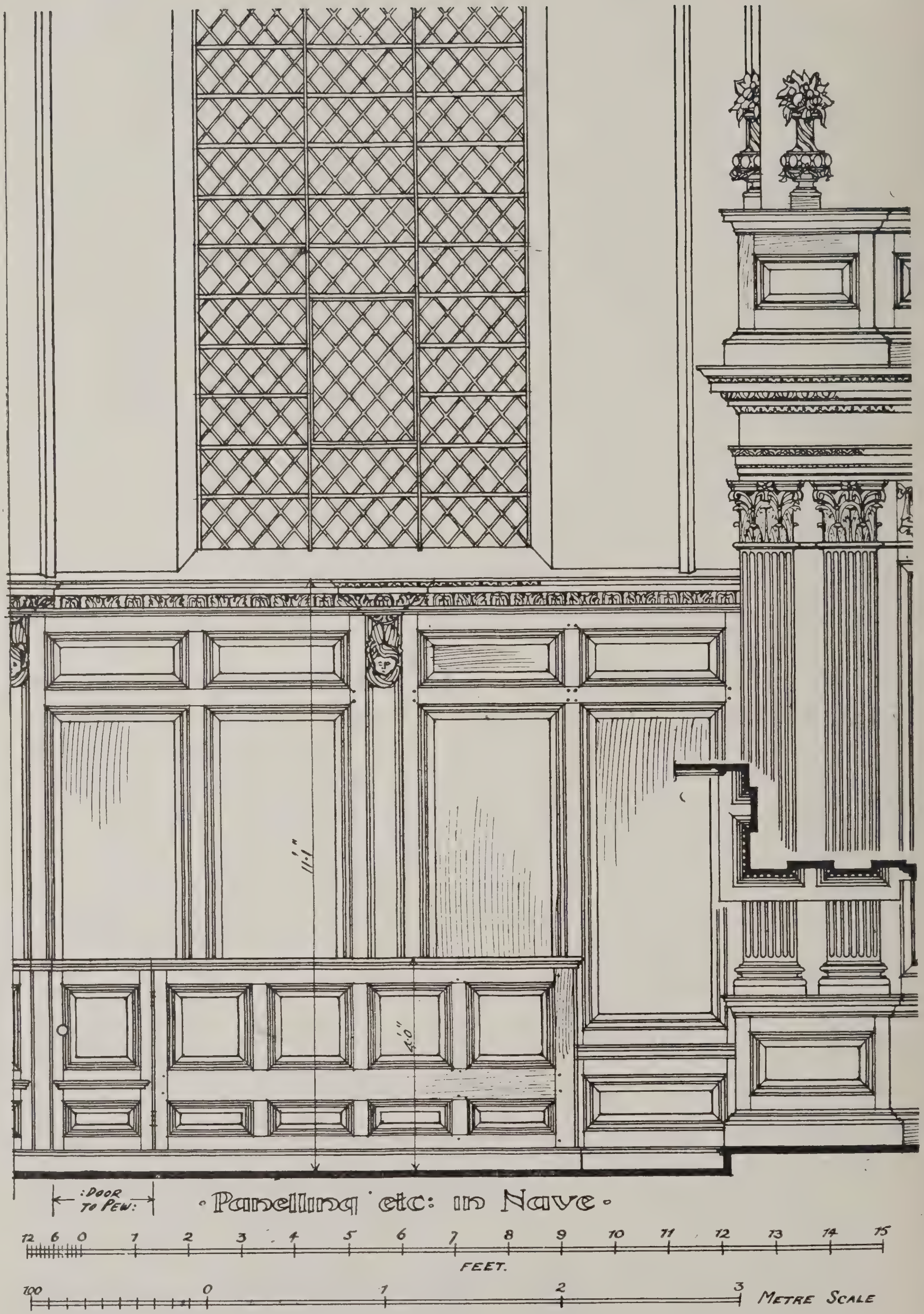
The London County Hall Site.

Mr. Justice Neville heard last week petition of the London County Council payment out of Court of a sum of ab £80,000 paid in by the London Cou Council as the purchase price of a pi of land, known as the Pedlar's Acre, a forming part of the site of the new Cou Hall in course of erection on the so side of Westminster Bridge. The prope was admittedly a charity, and had exis for some 300 years before the year 18 In the year, by the Statute 7 Geo. IV., 46, it was vested in a body of trustees w provisions for its maintenance and for manner in which the income should applied. The main question was wheth the charity was a civil or an ecclesiasti charity. The Lambeth Borough Coun alleged that it was a civil charity, and th the fund in Court should be paid out them to be applied in aid of the borou rates. On the other hand, the rector a churchwardens of the mother parish of Mary, Lambeth, alleged that it was ecclesiastical charity; that the fund oug not to be paid out; and that there oug to be a scheme for the application of income in which provision should be ma for the repairs of the parish church.

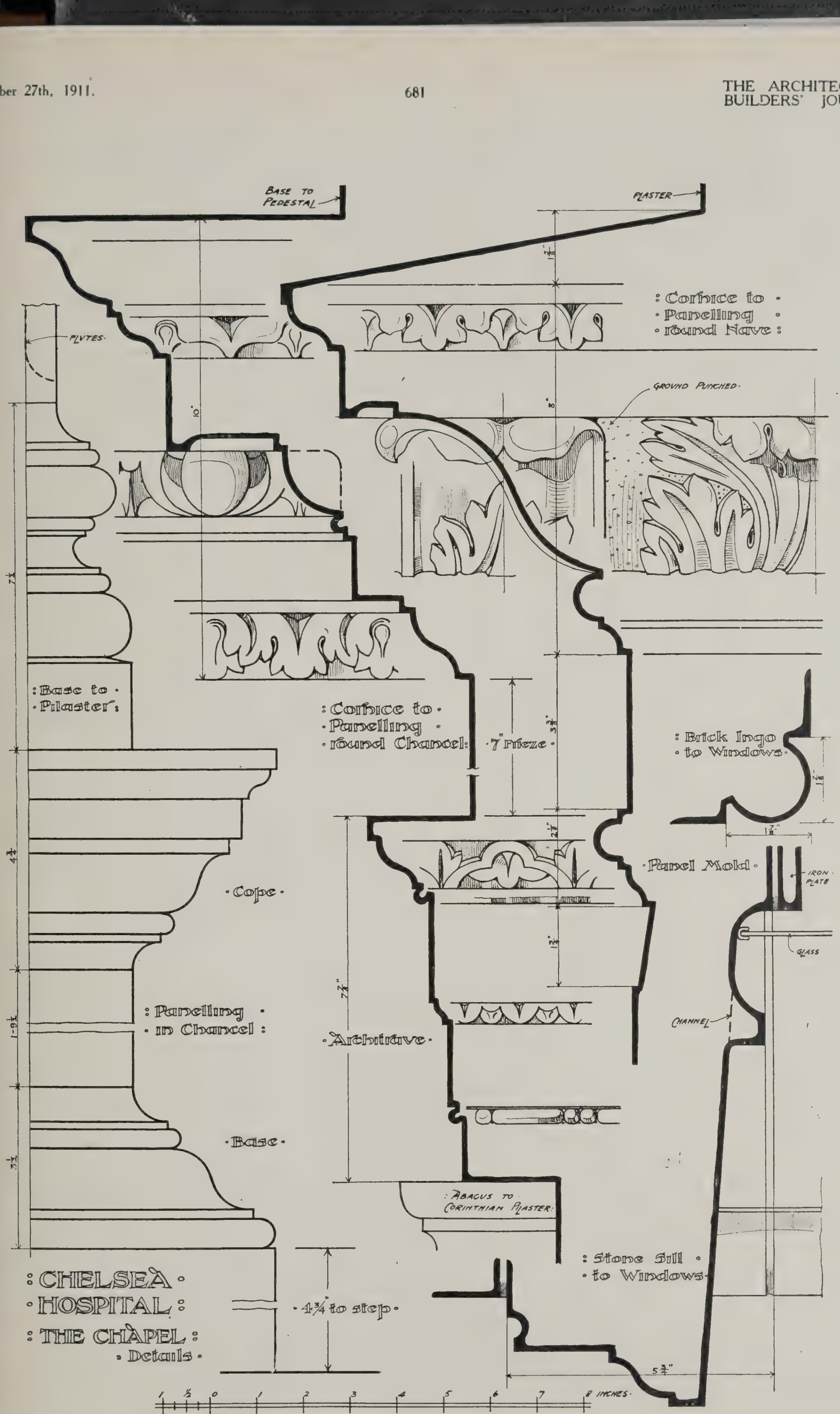
Mr. Justice Neville, in his judgme said that the borough council were entitled to payment out to them of money in Court, but that they are trust for the ratepayers, and must apply the come in aid of the general rate. thought that a direction should be ma for the payment of the income to borough council, with liberty to app with the consent of the Attorney-Gene certain sums amounting to £5.400, toget with the difference between the costs covered from the London County Coun and their costs, charges, and expen incurred on behalf of their trust, and w out prejudice to any claim they may ma in respect of out-of-pocket expenses curred in respect of the licence to emba should be paid to the Council.



DETAIL OF PANELLING IN THE CHAPEL OF CHELSEA HOSPITAL, LONDON.



CHELSEA HOSPITAL: WOODWORK IN CHAPEL. MEASURED AND DRAWN BY J. GILLESPIE.


Base to Pedestal
Plaster
Flutes
: Cornice to · Panelling · round Nave :
Ground Punched
10"
1⅞"
8"
3⅜"
2⅞"
1¾"
7⅞"
7½
4½
1-9½
3½
: Base to · Pilaster :
: Cornice to · Panelling · round Chancel :
· 7" Frieze ·
: Brick Ingo · to Windows ·
1⅞"
· Panel Mold ·
Iron Plate
Glass
Channel
· Cope ·
: Panelling · in Chancel :
· Architrave ·
· Base ·
: Abacus to Corinthian Pilaster :
: Stone Sill · to Windows ·
5¾"
· 4¾ to step ·
: CHELSEA · HOSPITAL : THE CHAPEL : · Details ·
1 ½ 0 1 2 3 4 5 6 7 8 inches

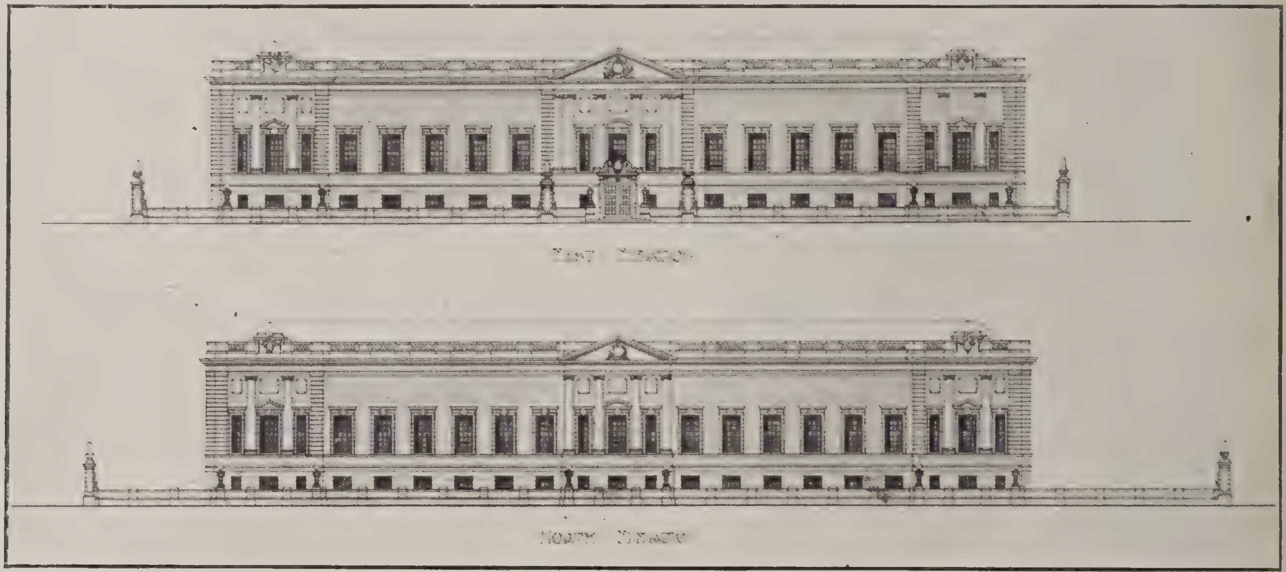
CHELSEA HOSPITAL: WOODWORK IN CHAPEL, MEASURED AND DRAWN BY J. GILLESPIE.

COMPETITION NOTES.

Cardiff Technical Institute.

In this competition, the awards in which were announced in last week's Journal, in which the first and second premiated designs were illustrated, sixty-one plans were submitted. Mr. J. S. Gibson, V.P.R.I.B.A., was the assessor. This week we publish the third and fourth premiated designs.

The Building and Sites Committee of Cardiff Corporation have recommended the Cardiff Education Committee to accept the plans of Messrs. Ivor Jones and Percy Thomas for the erection of the Technical Institute, which is to cost about £40,000. The assessor reported that the design of Messrs. Jones and Thomas was admirably arranged for teaching purposes. The building would be amply lighted in all parts, and treated in a technical architectural style. He strongly recommended its adoption. It was also recommended that the prize premiums of £125, £75, and £50 be awarded to Messrs. Jones and Thomas, Messrs. Cooper and Slater, Blackburn, and Mr. Myrtle Smith, Chelsea, respectively. These recommendations were adopted, and it was resolved to advertise for a quantity surveyor.



CARDIFF TECHNICAL INSTITUTE: THIRD-PREMIATED DESIGN. J. MYRTLE SMITH, A.R.I.B.A., ARCHITECT.

LIST OF COMPETITIONS OPEN.

DECEMBER 30. WORKMEN'S DWELLINGS.—At the Eisteddfod, 1912, a prize of £50 will be offered for designs for workmen's dwellings. Apply to Welsh Housing Association, 9, Temple Chambers, E.C.

JAN. 1, 1912. INFIRMARY EXTENSION, ROCHDALE.—The Board of Management of the Rochdale Infirmary invite architects practising in Rochdale prior to January 1st, 1911, to submit plans, designs, and estimates for extending the present buildings. Conditions of competition and instructions to architects, together with other information can be obtained on application to T. Elvyn Kershaw, Secretary, the Infirmary, Rochdale. Mr. Alexander Graham, F.R.I.B.A., has been appointed assessor.

JANUARY 6, 1912. PUBLIC LIBRARY, STAFFORD.—The actual building is not to cost more than £4,000. Enquiries were to be sent to the Town Clerk, Stafford, not later than November 25, and designs must be sent in by January 6. The Borough Engineer states that applicants for particulars should have enclosed £1 deposit. Mr. Henry T. Hare, F.R.I.B.A., is assessor.

JAN. 6, 1912. CENTRAL HALL, OFFICES, AND CARETAKER'S HOUSE, BOLTON.—The Lancashire and Cheshire Miners' Federation invite architects in practice on their own account within a radius of 25 miles of the Town Hall, Bolton, to submit designs in competition for the above. The Committee of the Federation have appointed as assessor Mr. Jonathan Simpson, F.R.I.B.A., of Bolton. The premiums offered are £50 and £25 for the two best designs in order of merit as adjudged by the assessor. Conditions and instructions will be sent to architects on application to Messrs. Fielding and Fernihough, Solicitors, 7, Fold Street, Bolton, accompanied by a deposit of one guinea (which is returnable on fulfilment of conditions).

JANUARY 8, 1912. WORKMEN'S DWELLINGS, BANBURY.—The Town Council of Banbury invite designs for workmen's dwellings. Applications for particulars (to be accompanied by a deposit of 10s., returnable on usual terms) to be sent not later than January 8 to Arthur Stockton, Town Clerk, Town Hall, Banbury.

JANUARY 9, 1912. PUBLIC HALL, SPENNYMOOR.—Competitive designs are invited by the Spennymoor U.D.C. for a public hall, market, and offices. Premiums, £50, £25, and £10, first premium to merge in commission. Particulars (deposit £2 2s., returnable on usual conditions) from F. Badcock, Clerk to the Council, 3, James Street, Spennymoor.

JANUARY 9. TECHNICAL SCHOOL, MAGHERAFELT.—The Magherafelt Technical Instruction Committee invite competitive designs for a technical school proposed to be erected in Magherafelt, the total expenditure, including provision of sewerage and water supply, not to exceed £1,200. The successful competitor will supervise work and be paid a commission of 5 per cent. on the building contract sum. Designs, bearing only a nom de plume, and accompanied by a sealed envelope containing competitor's name a address, to be delivered on or before January, 1912, to William D. Cousi County Technical Office, Courthou Coleraine.

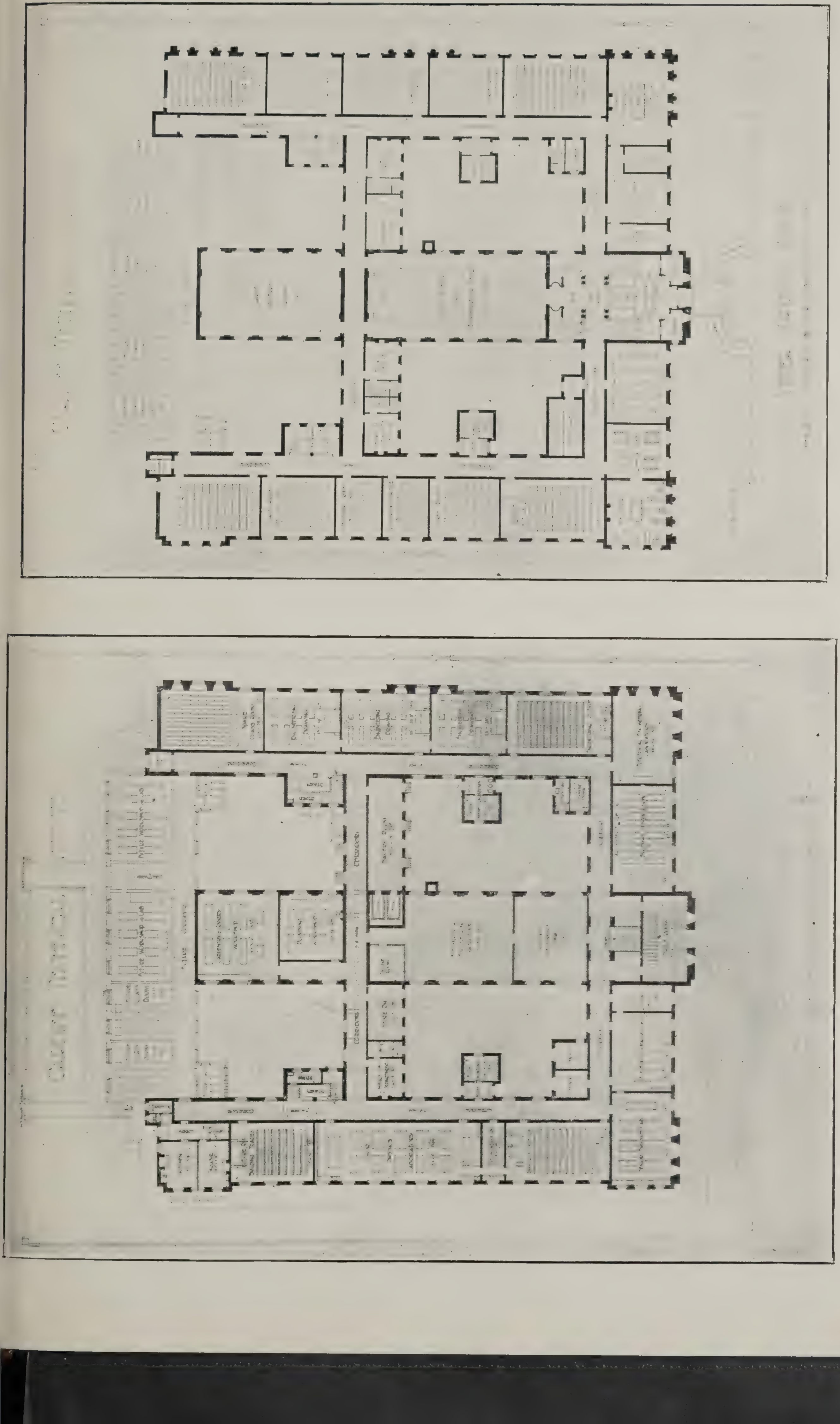
JANUARY 20, 1912. STATUE AT HAVAN —Competition instituted by the Cub Government for the erection at Havana an equestrian statue of the Cuban Gene Maceo. Plaster models should be sent sculptors desirous of competing to t "Comisión Ejecutiva, Monumento General Antonio Maceo, Secretaria de strucción Pública y Bellas Artes," Hava before January 20. The sum of 100, pesos (about £20,600) has been voted the work. British sculptors proposing compete should first put themselves i communication with the Commercial telligence Branch of the Board of Tra 73, Basinghall Street, E.C., where a further particulars (in Spanish) may seen.

JANUARY 29, 1912. GOVERNME PALACE, MONTEVIDEO.—Designs are vited for a Government Palace and a to improvement scheme. Premiums: For former, £2,125, and £850; for the latt £1,060, £640, and £425. Conditions, e at the Board of Trade, 73, Basingh Street, E.C.

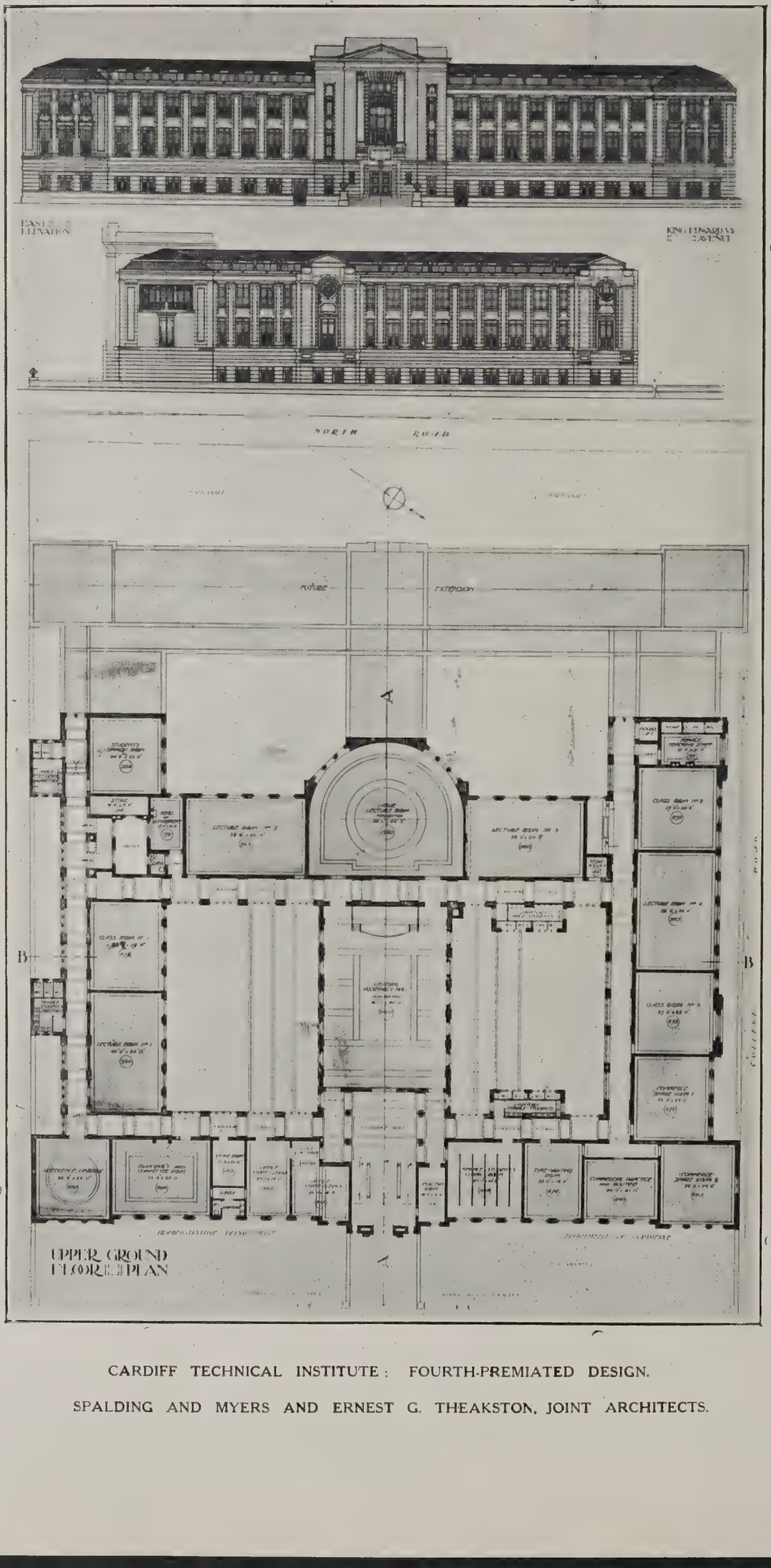
JANUARY 31, 1912. FEDERAL CAPI CITY, AUSTRALIA.—Competitive desi are invited by the Commonwealth Australia, for the laying-out of the Fede Capital City. Premiums are offered follows: 1st, £1,750; 2nd, £750; 3rd, £5 Conditions, together with particula plans, and instructions, may be obtai at the office of the High Commissioner Australia, London. Designs must delivered by January 31st, 1912, to K O'Malley, Minister of State for Ho Affairs, Commonwealth of Australia.

[The Institute of Architects of N South Wales and the R.I.B.A. have ask members and Licentiates not to take p in this competition unless the conditi are made more satisfactory. See our is for November 8, p. 485, and arti printed in the issue of November 22 p. 537.]

FEBRUARY 3, 1912. NURSES' HO BOLTON INFIRMARY.—Premiums, £ £20, and £10. Mr. John B. G F.R.I.B.A., has been appointed assessor.



CARDIFF TECHNICAL INSTITUTE. THIRD-PREMIATED DESIGN. J. MYRTLE SMITH, A.R.I.B.A., ARCHITECT.



CARDIFF TECHNICAL INSTITUTE: FOURTH-PREMIATED DESIGN.

SPALDING AND MYERS AND ERNEST G. THEAKSTON, JOINT ARCHITECTS.

FEBRUARY 17, 1912. NEW OFFICES FOR HE PORT OF LONDON.—The Port of ondon Authority invite preliminary etch designs for new head offices in rinity Square, and for lay-out of a uilding site. Sir Aston Webb, R.A., is e assessor.

JULY 1, 1912. CITY EXTENSION SCHEME, USSELDORF. — Premiums £1,000 and 375. Particulars from the Chief Burgoaster, Dusseldorf.

No date. HOUSING SCHEME, SADDLEORTH.—The council invite architects to bmit designs for houses suitable for the orking classes, to be built of stone and in ocks of not more than six, on certain ots of land which have been selected in e district of Saddleworth. The Council ill make the following awards: For the st selected designs £25, second £10, ird £5. Descriptions of the houses d other information may be obtained on plication to E. Rowbotham, Clerk to the addleworth Urban District Council, ppermill, near Oldham.

NOTTINGHAM ARCHITECTURAL SOCIETY.

Law as to Building Schemes.

There was a large attendance at last eek's meeting of this Society, Mr. Robert vans presiding. Mr. W. H. Taylor, chitect and barrister, read a paper on Some Notes on the Law Relating to ilding Schemes." He said the broad eneral principles of the law affecting velopment schemes were quite well own and understood by architects and vners of property. But when one scended to individual cases, one not inequently found that these principles were fficult to apply. They were often of a emingly hampering and vexatious charter, restricting the natural rights of the vner and circumscribing the range of the signers' scope. Then one was tempted a feeling of outraged liberty, forgetting at what appeared to be a hardship on e individual was generally for the benefit the community. Mr. Taylor then rerred to the difficulties that often occur hen it is proposed to develop building nd and form new streets. He quoted e latest decisions in the law courts relatg to these matters. It was, he said, very fficult to draw up any rules from these ses, as the legal decisions differed, and e by-laws of different authorities varied. he recent by-laws of the Nottingham rporation had been carefully compiled, d, in his opinion, were drawn up to prent absurd and vexatious interpretations. strongly advised that whenever possible e building owner should instruct his chitect to consult the surveyor to the cal authority before much progress was ade with the scheme, and so save waste time and labour, and possibly an exnsive and unsatisfactory law case.

EDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

A general meeting of the society was ld on December 14th, at the Leeds Instite, the President, Mr. Sydney D. Kitson, A., F.R.I.B.A., in the chair.

Mr. A. E. Dixon, F.R.I.B.A., of Biringham, read a paper on the "Early oman Churches." The lecturer dealt th the Early Christian Churches of tween the third and ninth centuries, also entioning the chapels, tombs and catambs. The mosaics in these buildings ceived special attention, and were illusted by a number of slides showing the decorations to the apses of many churches. A remarkable feature in the subjects of these mosaics is their serenity; humour and scenes of judgment or retribution are entirely absent. In contrast to this the lecture was concluded by a few slides showing grotesque capitals from the neighbourhood of Poitiers, where in all cases grim humour was the predominating subject.

An appreciative discussion followed, and Mr. H. S. Chorley, M.A., F.R.I.B.A., proposed a hearty vote of thanks, which was seconded by Mr. A. E. Kirk, A.R.I.B.A., and supported by Mr. C. B. Howdill, A.R.I.B.A.

FIRE BRIGADE HEAD-QUARTERS EXTENSION.

The additions which have been made to the chief station of the London Fire Brigade in Southwark Bridge Road were opened recently by Mr. Jocelyn Brandon, Chairman of the Fire Brigade Committee, who unfortunately met with an accident during the ceremony. He had used a table as a platform, and while descending slipped and fell, injuring his arm. First aid was rendered, and the arm was placed in a sling.

The additions to the headquarters consist of a new testing and drill ground, having an area of about 12,000 sq. ft., and a new south block, which includes workshops and offices for the inspection staff. The total cost of the additions was £30,000.

A large number of visitors accepted the invitation of the London County Council to be present at the opening ceremony. Mr. Brandon, before the accident, gave details of the work and the progress of the Brigade. The chief station is the largest in the world. There was a general "turn-out" by over 100 men of the Brigade under the command of Lieut. Sladen, Chief Officer, and a display of hook ladder drill, rescue work, and water pumping was given.

NEWQUAY NEW POST OFFICE.

The new Post Office at Newquay is practically completed, and is open for public business. It is situated in Bank Street, and is faced with Monk's Park stone, with finely cut mouldings, projecting main cornice, and open balustrading, which gives a very attractive appearance, and is a splendid addition to the public buildings of the town.

The main entrance is in the centre of the building, and a lobby gives access to the public office, 33 ft. by 24 ft. The floor is of mosaic; a panelled wood dado runs around the walls, and the ceiling and beams have a plaster cornice. The ground floor also contains the sorting office and postmen's room. The mails entrance is on the east side, and the truck and cycle accommodation is provided at the rear. A low-pressure boiler is the means adopted for heating the premises. A fireproof staircase communicates with the first floor, on which are situated the telegraph and telephone rooms, and rooms for the officials are also on this floor. On the second floor are apartments for the caretaker.

The electric light has been installed throughout by Messrs. Lord and Shand. The plans for the Post Office were prepared by Mr. E. J. Ennor, architect, of Newquay, in consultation with the surveyors of the Western District. The contractor is Mr. George Miners.

"BRITISH PORTLAND CEMENT MANUFACTURERS, LTD."

It was announced in the "Times" of December 22nd that a new company has been formed under the title of the British Portland Cement Manufacturers, Ltd. Registered originally with a small initial capital, it has now been increased to nearly £3,000,000 of share capital, with power to issue debenture stock dependent upon the amount of the issued share capital. The company is taking over and amalgamating a considerable number of cement works and businesses, amongst them the largest undertakings which are outside the Associated Company. Other groups are in course of formation for combining works in different parts of the country distant from the Thames and Medway.

The "Times" also understands that there is further under contemplation the erection of additional plants on sites already acquired, not only in the Midlands, but also in Wales, Scotland, and Ireland, whereby still further economies in transport will be secured.

LONDON MASTER BUILDERS' ASSOCIATION.

The Council met on December 14th, when the President (Mr. G. Bird Godson) occupied the chair.

After receiving and approving the Finance Committee's report, the Council proceeded to consider various trade matters, the National Insurance Bill, the Trade Disputes Act (1906), National Federation communications, and the next issue of the Association Handbook and Diary.

It was decided to hold the annual dinner on Thursday, February 22nd next, and the annual general meeting of the Association on the following Thursday (February 29th).

Messrs. The Patent Rapid Scaffold Tie Company, Ltd., 124, Victoria Street, Westminster, S.W., was elected an Associate Member, and the following were nominated as Ordinary Members: Mr. B. E. Nightingale, Albert Works, Albert Embankment, S.E.; Messrs. E. A. Roome and Co., 36, Basinghall Street, E.C.; Messrs. William F. Blay, Ltd., Dartford, Kent; Messrs. Lole and Co., 12a, Trafalgar Square, Chelsea, S.W.; Messrs. F. and F. J. Wood, 64, Cleveland Street, Mile End, E

NEW PUBLIC BATHS, READING.

New public baths at Reading, erected in memory of the late Alderman Arthur Hill, J.P., who was Mayor of the borough in 1883-7, have the front elevation designed in simple eighteenth-century style, the facing being of 2-in. Daneshill bricks, with Box Ground Bath stone dressings, while the roof is covered with Brewerton's irregular Old English tiles.

The main bath is 30ft. by 90ft., the depth varying from 3 ft. 3 ins. to 6 ft. 3 ins. The water can be treated to a temperature of 75 deg. Fahr. There are fifty dessing boxes, and the balcony will seat 90 persons and give standing accommodation to the like number, while 120 can stand comfortably on three sides of the bath. On the first floor there are half a dozen slipper baths. The swimming pond, gangways, floors, and stairs are of reinforced concrete on Wells's system, executed by Messrs. Stuart's Granolithic Co., Ltd. The architect is Mr. C. B. Willcocks, of Caversham.

L.C.C.'s PROPOSED REGULATIONS FOR REINFORCED CONCRETE BUILDINGS.

Continued from page 627, December 13th.

PART III.

RECTANGULAR AND T. BEAMS.

69.—The tensile resistance moment shall be obtained from the equations—

$$R_t = tA_t\left(d - \frac{n}{3}\right) \text{ or}$$

$$R_t = tA_t\, d\left(1 - \frac{n_{,}}{3}\right) \text{ or}$$

$$R_t = trbd^2\left(1 - \frac{n_{,}}{3}\right)$$

70.—The compressive resistance moment shall be obtained from the equation—

$$R_c = \frac{c}{2}\, bn\left(d - \frac{n}{3}\right) \text{ or}$$

$$R_c = \frac{cbd^2}{2}\, n_{,}\left(1 - \frac{n_{,}}{3}\right)$$

Tee Beams.

71.—For the purpose of computing the resistance moment of a tee beam, the width of the flange shall not be taken at more than—

(*a*) One-third of the effective span of the tee beam ;
(*b*) Three-fourths of the distance between the centres of the ribs of the tee beams ;
(*c*) Six times the width of the rib of the tee beam ;
(*d*) Fifteen times the thickness of the slab ;

whichever is the least.

72.—When a part of a slab is taken as forming part of a tee beam, the reinforcement in the slab transverse to the beam must cross the full width of the portion of the slab forming the flange of the tee beam.

73.—All tee beams shall be reinforced against shearing stress along the plane of junction of the rib and the flange.

74.—In the case of tee beams, when the neutral axis intersects the rib, *i.e.*, tee beams in which r is greater than

$$\frac{s_{,}^{2}}{2m\,(1 - s_{,})}$$

the position of the neutral axis shall be obtained from the equation

$$n_{,} = \frac{s_{,}^{2} + 2\,mr}{2\,(s_{,} - mr)}$$

75.—The mean compressive stress shall not be taken at more than

$$c\left[1 - \frac{s_{,}}{2n_{,}}\right] \text{ or}$$

$$\frac{cmr(2 - s_{,})}{s_{,}^{2} + 2mr}$$

76.—The arm of the resistance moment $= a$ where

$$a = d\left[1 - \frac{s_{,}}{3}\left(\frac{3n_{,} - 2s_{,}}{2n_{,} - s_{,}}\right)\right] \text{ or}$$

approximately

$$a = d - \frac{d_s}{2}$$

77.—The compressive resistance moment $= R_c$ where

$$R_c = c\left[1 - \frac{s_{,}}{2n_{,}}\right] bd_s a \text{ or}$$

$$R_c = cbd_s d\left[\frac{s_{,}^{3} + 4mrs_{,}^{2} - 12mrs_{,} + 12mr}{6\,(s_{,}^{2} + 2mr)}\right]$$

78.—The tensile resistance moment $= R_t$ where

$$R_t = tA_t a \text{ or}$$

$$R_t = tbd^2\left[\frac{s_{,}^{3} + 4mrs_{,}^{2} - 12mrs_{,} + 12mr}{6m(2 - s_{,})}\right]$$

79.—A note shall be added to the drawings of all pillars and beams showing the loads which have been provided for.

PART IV. PILLARS.

80.—The term "pillar" when used in these regulations shall be deemed to include any pillar, pier, post, column, detached support or any other vertical compression member.

81.—Pillars shall be designed on the assumption that the concrete and the vertical bars are shortened in length in the same proportion.

82.—In calculating the strength of a pillar, the maximum value of the ratio of length to effective diameter shall be taken.

83.—The length shall be measured between the lateral supports, irrespective of any splayed work.

84.—The effective diameter shall be measured to the outside of the outermost vertical reinforcement and shall be measured in the direction of the lateral supports which determine the length of the pillar.

85.—A pillar shall be deemed to have fixed ends when the ends of the pillar are sufficiently secured to other parts of the construction having such rigidity as will maintain the axis of the pillar at the ends in its original vertical position under all loads less than the crippling load.

86.—When both ends are fixed and when the ratio of length to the effective diameter does not exceed—

18 .. The full stress may be allowed on the pillars.
21 .. .8 of above may be allowed.
24 .. .6 ,, ,, ,,
27 .. .4 ,, ,, ,,
30 .. .2 ,, ,, ,,

For other ratios the stress shall be proportionate to the above.

87.—In the case of compression members not having both ends fixed, the loads shall be as follows—

Let P = the maximum permissible *pressure* on pillars and compression members having fixed ends.

Condition of ends	Working load.
One end fixed and one end hinged	$\frac{P}{2}$
Both ends hinged	$\frac{P}{4}$
One end fixed and the other end free and not guided, stayed or supported in all directions	$\frac{P}{16}$

88.—Each pillar with rectilinear laterals shall have at least four lines of vertical reinforcement throughout its entire length.

89.—Each pillar with curvilinear laterals shall have at least six lines of vertical reinforcement throughout its entire length.

90.—The diameter of vertical rods shall not be less than ½ inch nor greater tha 2 inches.

91.—The least diameter of rectiline laterals (hooping) shall not be less tha 3/16ths of an inch.

92.—The least diameter of curviline laterals (hooping) shall not be less tha ⅛ of an inch.

93.—The pitch of the laterals shall n exceed 6/10ths of the effective diamet of the pillars.

94.—Joints in the vertical reinforc ments of pillars shall only be made at floor level or other point of lateral suppo

95.—All joints in the vertical reinforc ments shall be provided with steel or ir

(*a*) Close-fitting sleeves, or
(*b*) Clamps, or
(*c*) Properly bound splices havi an overlap at least equal forty times the least diameter the bar, or
(*d*) Flitch or fish bars having t grip length on either side of t joint at least equal to for times the least diameter of t bar.

96.—In the case of rectangular pilla in which the ratio between the great and the lesser diameter exceeds one a a half, the cross section of the pillar sh be subdivided by cross-ties, and t number of vertical rods shall be such th the distance between the rods along t longer side of the rectangle shall n exceed the distance between the ro along the shorter side of the rectangle.

97.—The total cross-sectional area the vertical reinforcement in any pill shall not be less than 0.8 per cent. of t area of the hooped core.

98.—The volume of lateral reinforc ment shall not be less than 0.5 per cen of the volume of the hooped core.

99.—The stress on the concrete in t area bounded by the lateral reinforceme shall not exceed—

$$W_f u\left[1 + f\,s\,r\right] \text{ where}$$

W_f = the *working factor* = the recipr cal of the safety factor $= \frac{1}{Sf}$
Sf = the *safety factor* = 4.
u = the *ultimate crushing* resistan of concrete at three months.
f = *form* factor, depending upon for or type of laterals (see table).
s = *spacing* factor depending up the spacing or pitch of the laterals (s table).
r = *ratio* of the volume of later reinforcement to the volume the hooped core in any given lengt of pillar.
$Wf\ u$ = ¼ of the ultimate compressi resistance of concrete at ninet days after mixing as given i item No. (132).

100.—[See table below].

TABLE SHOWING THE VALUE OF $f\,s$.

Form of lateral reinforcement.	Form factor f.	Spacing of laterals in terms of diameter of hooped core.	Spacing factor s.	Value of fs.
Helical	1.	.2*d*	32	32
Helical	1.	.3*d*	24	24
Helical	1.	.4*d*	16	16
Circular hoops	·75	.2*d*	32	24
Circular hoops	·75	.3*d*	24	18
Circular hoops	·75	.4*d*	16	12
Rectilinear	·5	.2*d*	32	16
Rectilinear	·5	.3*d*	24	12
Rectilinear	·5	.4*d*	16	8
Rectilinear	·5	.5*d*	8	4
Rectilinear	·5	.6*d*	0	0

101.—The safe load on pillars shall be
tained from the equation—
$P = c\,[A + (m - 1)\,A_v]$ where
P = Total permissible *pressure*.
c = working *compressive* stress on the
ncrete of the hooped core.
A = effective *area* of the pillar, *i.e.*,
area bounded by the lateral rein-
cement measured to the inside of the
oping.
A_v = *Area* of the *vertical* reinforce-
nt.

$$m = \textit{modular}\ \text{ratio} = \frac{E_s}{E_c}$$

102.—The following limits of stress
all be observed in pillars—

(*a*) The stress on the metal reinforcement (*i.e.*, the value of *mc*) shall not exceed 0.5 of the elastic limit of the metal;

(*b*) The stress on the metal reinforcement shall not exceed one-fourth of the ultimate statical tensile strength of the metal;

(*c*) Notwithstanding any other provision of these regulations, the working stress on the concrete of pillars shall not exceed the following values, whatever the percentage of lateral reinforcement—

Form of laterals.	Limiting value of working stress.
ctilinear	0.5u
lependent circular 100ps	0.58u
lical	0.66u

PART V.

WALLS.

103.—Where the dead loads and super-
posed loads are transmitted to the
indations by a series of reinforced con-
te pillars, beams, arches, or other
istruction designed and reinforced
der these rules, any external enclosing
lls of reinforced concrete between such
lars may be of any thickness not less
in four inches, provided that such
closing walls are designed and rein-
ced under these rules to resist any
ds and pressures they may have to
ry.

104.—In any case where any wall or
rt of a wall is intended to support ver-
al loads or resist lateral pressures, it
ill be of such thickness as may be
essary to keep the stresses within the
its prescribed by these rules for the
istruction of pillars, beams, and other
mbers.

105.—When portions of the external
lls between the reinforced concrete
lars and beams are constructed of
ckwork, or stonework or plain concrete,
h portions of walls shall be of a thick-
s not less than 8½ inches for the top-
st 20 feet of height and 13 inches for
remainder of their height below such
most 20 feet.

When walls are constructed of hollow
icrete blocks the total thickness shall
t be less than 8½ inches nor the hollow
ice more than 3 inches.

Provided that a less thickness shall be
wed in any case in which under the
ndon Building Act, 1894, such less
ckness is prescribed, and provided that
any case in which an external wall or
tion of an external wall is not supported or carried or secured by the reinforced concrete skeleton framed construction within the limit of height and length prescribed by the First Schedule to the London Building Act, 1894, for the purpose of determining the thickness of walls, such external walls or portion of external walls shall be of a thickness not less than that prescribed by such schedule.

106.—All walls and facing materials shall be securely connected to the pillars, beams, floors, and other contiguous parts of the reinforced concrete construction.

107.—Each panel in any external wall shall be designed to resist safely a horizontal pressure of at least thirty pounds per square foot assumed to be acting uniformly over the area of one panel from either side.

108.—Openings of larger aggregate area than allowed by the principal Act may be made in external walls provided—

(*a*) That the aggregate area of such openings in a wall of any storey above the ground storey will not exceed two-thirds of the whole area of the wall of such storey.

(*b*) That the aggregate width of such openings in a wall of any storey above the ground storey will not exceed three-quarters of the whole length of the wall of such storey.

109.—Party walls and division walls constructed in reinforced concrete in accordance with these regulations shall be of such thickness as may be necessary to comply therewith, but in no part shall such wall be of less thickness than 8 inches.

110.—Provided that any such party wall between a building constructed in reinforced concrete and a building (of the warehouse class) constructed in accordance with the Rules of the Act of 1894, or as a steel-framed building, shall not be in any part less than 13 inches in thickness.

111.—The pressure on any brickwork shall not exceed the following tons per square foot; Blue brick in cement mortar, 12; hard brick (including London stock) in cement mortar, 8; ordinary brick in cement mortar, 5.

Such brickwork shall not have a height without proper lateral supports of more than six times its least thickness, but any such brickwork with proper supports may have a height between such lateral supports not more than twelve times the least thickness of such brickwork. Such thickness shall in no case be less than thirteen and a half inches.

PART VI.

FOUNDATIONS.

112.—The pressure of foundations on the natural ground shall not exceed the following tons per square foot: Natural bed of soft clay or wet or loose sand, 1; natural bed of ordinary clay or confined sand, 2; natural bed of compact gravel, London blue clay or chalk, 4.

113.—The pressure on plain concrete in foundations shall not exceed twelve tons per square foot.

PART VII.

PROTECTION.

114.—The cover shall be measured from the outer surface of the concrete to the outer surface of the metal reinforcement.

115.—The cover of vertical bars in pillars shall not be less than 1½ inches and not less than the diameter of such vertical bar.

116.—The cover of longitudinal bars in beams shall not be less than one inch and not less than the diameter of such longitudinal bar.

117.—The cover of tensile, compressive, shear or any other reinforcement in slabs shall not be less than one-half inch, and not less than the diameter of the bars in uch reinforcement.

PART VIII.

MATERIALS.

Cement.

118.—All cement used shall be Portland cement of slow setting quality and shall be in accordance with the British Standard Specification from time to time in operation.

119.—The quantity of cement shall be determined by weight and ninety pounds shall be deemed to be the equivalent of one cubic foot.

Sand.

120.—The sand shall be clean and gritty and composed of hard silicious grains. It shall be free from clay or any animal or vegetable matter.

121.—All sand shall pass through a mesh three-sixteenths of an inch square measured in the clear.

122.—The sand shall be separated from the coarse material before the materials are measured.

Coarse Material.

123.—The term "coarse material" means all the ingredients of the concrete except the cement and the sand.

124.—The coarse material shall consist of clean Thames or pit-ballast or gravel, hard stone, granite, basalt, trap rock, broken hard brick or other equally hard suitable material to be approved by the District Surveyor.

125.—The following materials shall not be used with the sand or coarse material in the composition of the concrete under these regulations—

(*a*) Coal residues, including clinkers, cinders, ashes, coke breeze, pan breeze, slag and other similar material.

(*b*) Blast furnace slag, copper slag, forge breeze, dross and other similar material.

(*c*) Sulphates, including plaster of Paris, and other similar materials.

(*d*) Limestones, magnesian limestones, marbles and other calcium carbonates.

126.—Unless quite clean all ballast or gravel shall be thoroughly washed.

127.—The coarse material shall be of such a size as will pass through a mesh three-quarters of an inch square measured in the clear and be retained on a mesh

Proportion by volume.			Ultimate compressive resistance in pounds per square inch.	
Cement.	Sand.	Coarse material.	28 days after mixing.	90 days after mixing.
1	2	4	1,800	2,400
1	1½	3	2,100	2,800
1	1	2	2,700	3,600

three-sixteenths of an inch square measured in the clear.

128.—The coarse material shall be varied in size as much as possible between the limits of size allowed for the work, but shall not be larger than such as can pass between the reinforcement and between the reinforcement and the centering.

129.—The coarse material if of a porous nature shall be thoroughly wetted before being mixed with the cement mortar.

130.—The volume of mortar shall be at least 15 per cent. in excess of what would be required to fill completely the interstices and voids of the coarse material.

131.—The volume of coarse material shall not be more than twice the volume of sand.

Concrete.

132A.—The concrete shall be composed of cement, sand and coarse material in one of the following or intermediate proportions, and the ultimate compressive specified for the proportion adopted. [See table at foot of p. 687.]

ENQUIRIES ANSWERED.

House Property: a Question of Book-keeping.

E.T.D. (London) writes: "We should be grateful if you could help us in a difficulty we have met with in our book-keeping. When houses are erected for investment and not for sale, and are subsequently mortgaged, is the cost of such mortgages (and the necessary survey fees) a capital or a revenue ependiture? i.e., should it be added to the cost of the house, or deducted from the income derived therefrom? Along the same lines, when such a house is sold, to which of the two foregoing heads should such items as legal expenses, commission, etc., be charged?"

—It is evidently desirable that the capital invested should be preserved intact and not saddled with the risk that on realisation again it will be depleted by the amount of the charges in question or any portion of them, especially if it is a trustees' investment. It is preferable, therefore, to charge such expenses, as likewise those incidental to realisation, to revenue until it is seen whether the realisation yields a surplus over the original investment, when it would become a matter of the convenience of those interested whether the surplus or a portion of it is applied to revenue by way of repaying the cost of the transactions in question. A. G. W.

ANOTHER FUNNIOSITY OF REINFORCED CONCRETE.

Not long ago a correspondent proved to us by a concrete example that it was much more easy to extract fun from reinforced concrete than sunbeams from cucumbers. Another correspondent thinks that the following extract from a specification lends itself to innocent mirth: "The concrete to be carefully packed over and between the bars and well rammed until the mass quivers under the blows like a piece of liver." We are not quite convinced that this is so very funny as our correspondent seems to think it. In fact, it seems rather to tend towards the poetical, not only in its daring imagery, but in its suggestion of rhythm, rhyme, and assonance: Let the concrete be carefully packed Between and right over the bars, Well rammed and judiciously thwacked, Till, under the consequent jars, It shall sheenily shudder and shiver Like a lump of resilient liver. If mnemonical doggerel is useful in Latin grammars, might it not serve the same wise purpose in specifications? At any rate it would help to brighten up what is probably the most deadly dull form of composition within human experience, always excepting Acts of Parliament.

COMING EVENTS.

Friday, December 29.
JUNIOR INSTITUTION OF ENGINEERS.—Visit to Factory of Messrs. Otto Monsted, Ltd., Margarine Manufacturers, Southall. 3 p.m.

Wednesday, January 3, 1912.
CARDIFF, SOUTH WALES, AND MONMOUTHSHIRE ARCHITECTURAL SOCIETY.—J. H. Phillips on "Holidays in Brittany."

Thursday, January 5.
JUNIOR INSTITUTION OF ENGINEERS.—Presidential Address by Commendatore G. Marconi, D.Sc. Tickets from Secretary, 39, Victoria Street, Westminster.

Monday, January 8, 1912.
LIVERPOOL ARCHITECTURAL SOCIETY.—Fourth ordinary meeting. 5.30 p.m.

Wednesday, January 10, 1912.
MANCHESTER SOCIETY OF ARCHITECTS.—Sir Charles Nicholson, M.A., Oxon., on "Construction and Design."

Thursday, January 11, 1912.
CONCRETE INSTITUTE.—Discussion of the re
the Reinforced Concrete Practice Standing
mittee, embodying suggestions on "The Stan
ation of Drawings for Reinforced Concrete
8 p.m.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVE
C. F. Innocent, F.R.I.B.A., on "The Old S
Dwelling."

***Tuesday, January* 16, 1912.**
UNIVERSITY COLLEGE, LONDON (Gower
W.C.).—First of a course of Lectures on the
cation of the principles of science to the pro
of Heating and Ventilating, by A. H. Barker,
B.Sc., Wh.Sc. 5 p.m.

ARCHITECTURAL ASSOCIATION OF IRELAND.—Lect

Monday, January 22, 1912.
ROYAL INSTITUTE OF BRITISH ARCHITECTS, 9, C
Street, W.—Sir Alfred East, A.R.A., and
Wood, F.R.I.B.A., on "Colour Decoration."
of Prizes and Studentships. 8 p.m.

Friday, January 26, 1912.
BIRMINGHAM ARCHITECTURAL ASSOCIATION.—Ba
Fletcher, F.R.I.B.A., on "The Carpenter's C
6.45.

Monday, February 5, 1912.
ROYAL INSTITUTE OF BRITISH ARCHITECTS, 9, C
Street, W.—President's Address to Students.
sentation of Prizes. 8 p.m.

Monday, February 19, 1912.
ROYAL INSTITUTE OF BRITISH ARCHITECTS, 9, Co
Street, W.—Edward Warren, F.S.A., F.R.I.B.,
"Collegiate Architecture." 8 p.m.

Thursday February 22.
LONDON MASTER BUILDERS' ASSOCIATION.—A
Dinner.

Thursday, February 29.
LONDON MASTER BUILDERS' ASSOCIATION.—A
General Meeting.

Monday, March 4, 1912.
ROYAL INSTITUTE OF BRITISH ARCHITECTS, 9, Col
Street, W.—Election of Royal Gold Medalli
p.m.

Monday, March 18, 1912.
ROYAL INSTITUTE OF BRITISH ARCHITECTS, 9, Col
Street, W.—W. H. Ward, M.A., A.R.I.B.A
"The Architecture of the French Renaissanc

FEDERATION NEWS

Manchester, Salford, and District

The half-yearly general meeting of the Man
ter, Salford, and District Building Trades
ployers' Association was held at the Board
National Buildings, St. Mary's Parsonage,
chester, on November 16th, when the president
Wm. Tinker) presided over a large attendan
members.

The agenda was chiefly occupied with matte
local trade interest, one of which was to con
an application from the builders' labourers to
their demands for recognition and a minimum
to the Conciliation Boards or to an indepe
arbitrator. This matter having been conside
two special general meetings at which it wa
cided to decline the labourers' application, the
ing felt compelled to decline to accede to the
gestion put forward, and especially in view o
fact that many employers were at the present
paying their labourers the minimum as asked

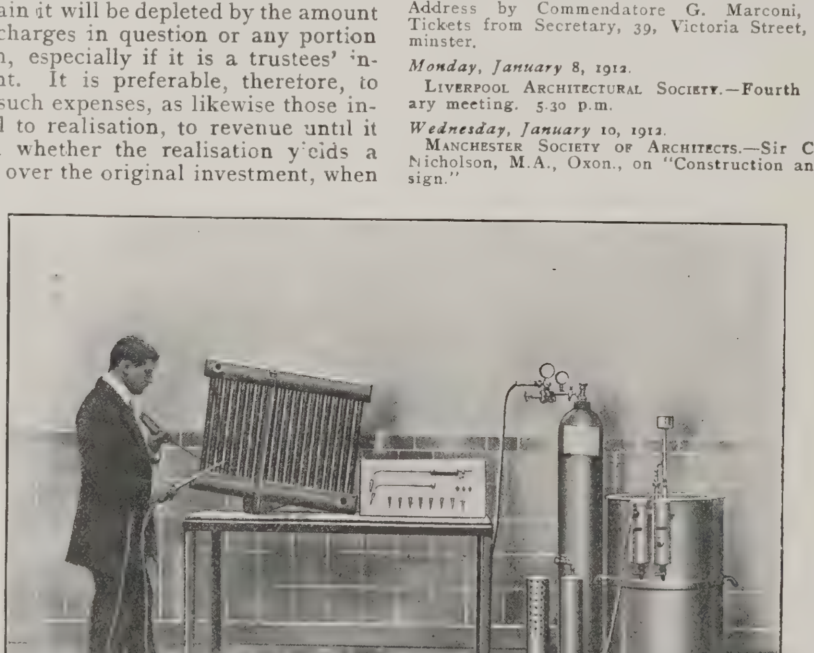
The half-yearly report adopted at this me
shows that the number of members elected d
the past year total 15. On the other hand, 5
have been removed from the list owing to
having gone out of business, thus leaving a n
crease of 10 members. The total membersh
date is 221.

The association have during the half-year
exceedingly busy dealing with various labour m
ments, and consequently many meetings have
held.

Notices for increases in wages of 1d. per
(9½d. to 10½d.), and of drastic alterations to
have been received from the operative joiners
woodcutting machinists. The employers have
mitted counter-proposals, and the same will re
consideration early in the new year.

The notice of the local operative plasterers,
expired in May last, claiming all topping to con
work, still remains an unsolved problem. The
cation has on two occasions been submitted t
National committees under the N.A.O.P. a
ment, but without any result. The operative
cretors have now tendered the necessary six mo
notice to terminate their rules with the emplo
so that one of the "stop-blocks" is now rem
Unfortunately, however, they have requested
their rules shall be annulled as from May 1st
and that after that date they shall be paid
plasterers' rate of wages for all concrete
which in cash means an increase from 8d. to
per hour. The employers feel that this is not
the plasterers desire, and the only means
settlement, or at least a definition of their req
ments, will be for all the parties interested to
in joint conference in accordance with the re
mendation of the National Demarcation Comm
of September 29th, and it is hoped to arrange
conference early in January.

It has been decided to hold the Association an
dinner in February, and the arrangements
been delegated to a special Sub-committee.—J
TOMLISON, Secretary.



The above illustration represents an apparatus, manufactured by Messrs. Matthews and Yates, Ltd., of Manchester, for cutting and welding metal by the oxy-acetylene flame. The method was fully described in our issue for September 20th last. The essential features are an acetylene generator, a supply of oxygen, and a blow-pipe, the apparatus being easily operated by one man.

[CUTTING AND WELDING BY OXY-ACETYLENE FLAME.

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Some Notable Buildings of the Year.

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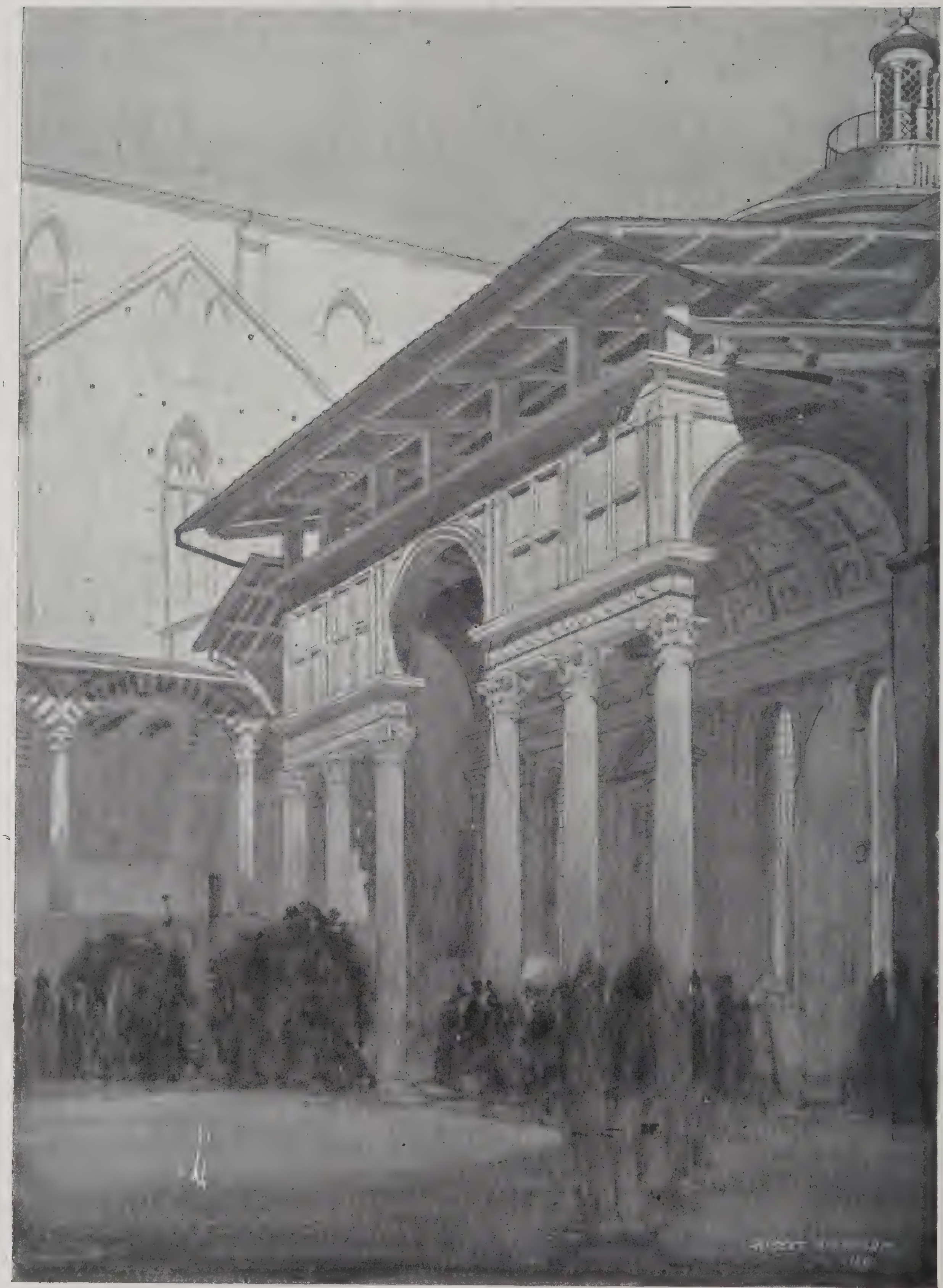
National Gallery Extension, London. The late H. N. Hawks, I.S.O. (H.M. Office of Works), Architect .. 784–786
The Eton Memorial. Laurence K. Hall, F.R.I.B.A., and Sidney K. Greenslade, A.R.I.B.A., Architects .. 787–791
The Institution of Electrical Engineers, Victoria Embankment, London. H. Percy Adams, F.R.I.B.A., and Charles Holden, A.R.I.B.A., Architects .. 792–794
The Students' Union, Liverpool. Professor C. H. Reilly, M.A., A.R.I.B.A., Architect 794–795
Northern Conservative and Unionist Club Newcastle-on-Tyne. Cackett & Burns-Dick, FF.R.I.B.A., Architects .. 796–798
New Premises for the Zoological Society, Regent's Park, London. John Belcher, R.A., and J. J. Joass, F.R.I.B.A., Architects, ... 799–800
Royal Exchange Buildings, London, E.C. Sir Ernest George, A.R.A., and Yeates, Architects 801–803
Royal Liver Building, Liverpool. W. Aubrey Thomas, Architect .. 804–806
Kodak Building, Kingsway, London. J. J. Burnet, A.R.S.A., F.R.I.B.A., Architect, ... 807–808
University College of North Wales, Bangor. Henry T. Hare, F.R.I.B.A., Architect 809–812
General Buildings, Aldwych, London. J. J. Burnet, A.R.S.A., F.R.I.B.A., Architect. 813–816

Reinforced Concrete in 1911.

Kleine Patent Fire-resisting Flooring Syndicate, Ltd. :—
  New Building for the Calico Printers' Association, Manchester .. 817
Expanded Metal Co., Ltd., London :—
  Central Higher Grade Schools, Aberdeen; New G.P.O., Hull; New Crown Hill, Reservoir, Devonport; Water Tank, Waterford; Public Baths, Jarrow 818
  Esholt Sewerage Works, Bradford; Foundation Raft, Torquay; Gas Works, Birkenhead; Assembly Rooms, etc., Newcastle-on-Tyne; Alliance Co.'s Building, Newcastle-on-Tyne 822
Trussed Concrete Steel Co., Ltd. :—
  Bonnington Hotel, London; Premises in Bedford Street, London; Royal Infirmary, Liverpool; Gantry and Coal Bunkers, Rochdale 819
  Government House, Salisbury; Farnworth Bridge, Widnes; Stranmillis Bridge, Belfast 827
  Telephone Exchange, Gothenburg .. 830
Stuart's Granolithic Co., Ltd. :—
  Girls' High School, Barnsley; Municipal Buildings, Burslem; Telegraph Stores, Bordesley Green, Birmingham 820
Edmond Coignet, Ltd. :—
  General Post Office and the King's House, Kingston, Jamaica .. 821
George F. West and Co. :—
  Electric Power House, Coal Bunker, and Water Tower, Skinningrove, Yorks 823
Indented Bar and Concrete Engineering Co., Ltd. :—
  The Afzalgunj Bridge, India .. 824
William Moss and Sons :—
  Water-Softening and Storage Tank, Openshaw, Manchester .. 825
J. A. King and Co. :—
  Pavement, Stallboard, and Roof Lights in "Ferro-Glass" at Kodak Building and Whiteley's New Premises, London 825
A. D. Dawnay and Sons, Ltd. :—
  Stud and Link Factory, Witton, Birmingham 826
D. G. Somerville and Co. :—
  Water Tower, Bembridge; New Premises for R. Clay and Sons, Ltd., London, S.E. 826
Holloway Bros. (London), Ltd. :—
  New Y.M.C.A. Premises, London; Queen's Hall, Highcliffe Hotel, Margate 828
Empire Stone Co., Ltd. :—
  King's Norton Schools 829
Higgs and Hill, Ltd. :—
  Whiston Street Bridge, Shoreditch, London 830



THE PORTICO TO THE PAZZI CHAPEL, SANTA CROCE, FLORENCE. DRAWN BY ROBERT ATKINSON, A.R.I.B.A.

THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 30th, 1911. *CAXTON HOUSE, WESTMINSTER.* VOLUME 34, No. 884.

EVENTS OF THE YEAR.

THE year which is just about to close has witnessed several notable events and several new departures, in matters which are connected with architecture; some of which can be chronicled as things accomplished, and some as things which promise possible developments in the future. It has been in
me respects a year of considerable interest.

We have had a Coronation Procession which has been
companied by some degree of effort at a more systematic
coration of London for the occasion—more, at least, than
d been previously attempted. It is true that the results
re hardly commensurate with the amount of discussion
iich went on about the subject; but there has been the
ecedent established for the employment of some eminent
tists to design or advise upon a scheme of decoration;
d the uniform treatment of Whitehall and Parliament
reet was not unsuccessful, and was, at all events, a step
the right direction. But the idea of a scheme of de-
ration was only very partially successful, and the lesson
be gathered is that on future occasions of the same kind
subject should be taken in hand and a comprehensive
ieme worked out at a much earlier date before the event,
posing that (as is generally the case) the date of the cele-
ition is fixed a long time in advance. In the case of
Coronation Procession a new idea, which had to
ounter some of the opposition usually made to new
as, was taken up too late, and there was not time to
anise it fully.

The year has been marked by an entirely new recognition
the part of the legislature of the rights of architects,
admitting them to a place in the protection of original
as under the Copyright Act. The idea of recognising
ight of an architect in his design was so entirely new
this country that strong opposition to it was only to
expected, and it is indeed matter for some surprise that
provision was carried at all, and perhaps it is matter
still more surprise that some of the architects were
mselves among the opponents of it. Their reasoning
not very logical; and we can feel no doubt that the
t of the legal recognition of architects in this manner,
n if it does not lead to much practical result, will
a benefit to the profession in improving their status
ore the public, and showing that architects are not
sons who are to be always victimised, as they so often
e been, by judges and lawyers.

he opening of the Queen Victoria monumental road has
ortunately added one more to the many instances
his country in which a great scheme has remained in
mewhat maimed condition for want of a previous under-
iding as to the manner in which it was to be com-
ed; so that a large and dignified architectural ter-
ation to the road leads us out only into an unfinished
e with an opening into Whitehall which can claim to
iothing more than a kind of hole broken into the boun-
y wall of the street, and the proper completion of a
t scheme has been adjourned, to all appearance, indefinitely, after a rather unseemly wrangle between two public bodies as to whose duty it was to pay for the proper completion of the scheme if carried out. It is an unhappy example of the way we do things in England. The road itself, too, is still disfigured by the commonplace lamp standards put up by the borough council, which we were assured were only a temporary makeshift; and we are waiting to see them replaced by something better. The completion and inauguration of the vast sculptural memorial at the west end of the monumental road has been one of the events of the year; and while one is glad to see that this at least is finished, it is only with rather partial feelings that one can contemplate the result; our patriotism has to suffer in the admission that this, which has occupied so much time and cost so much money, is a great work of art rather in respect of quantity than quality. One cannot but feel that a public competition among British sculptors (for it should certainly have been confined to them) might have produced something that one could regard with more permanent and unmixed satisfaction. In connection with this subject one naturally thinks of the proposed Edward VII. memorial, the intended position of which seems to have been at last decided on after a rather wearisome discussion; but we cannot regard the choice as very satisfactory, since the memorial must stand sideways to the main avenue of Piccadilly, and is axial only to the new road, which itself is not axial to the Victoria Memorial group, but leads up to the side of it; altogether not a very good principle for the placing of an important national monument. We are still of opinion that by far the best and most significant position, in every respect, for the Edward VII. memorial would be to place it in the centre of the east end of the monumental road, with Sir Aston Webb's portal building as the background to it; the memorial to face west towards the Victoria memorial. There is ample space in the roadway for a fine memorial, if its pedestal and accessories are kept within reasonable limits; and there is still so much dissatisfaction with the site that is said to be settled on that one cannot feel at all sure that it will not have to be reconsidered. A good deal has been said in favour of throwing the design of this new memorial open to public competition among sculptors and architects; it is too late for that now, as the sculptor and architect have been definitely commissioned, and it would be a breach of faith with them to reopen the question; but though in the present instance we have a great deal of faith in both the sculptor and architect selected, our feeling is that in such cases in future there ought to be public competition, in a sketch form first, and a limited competition for the complete design afterwards. The principal reason that has been given against it, that the leading sculptors would not compete, is not an entirely creditable one to the artists. In the great Renaissance period in Italy the most eminent artists did not think it beneath them to compete for a work of national or municipal importance.

The proposed extension and new foundation of what has been known hitherto as the British School at Rome may possibly prove a great influence for the improvement of English art, but there is a great deal to be considered before it can have that result. Those who have started and promoted the idea do not seem as yet to understand what they have done. The British School at Rome is at present an institution for archæological research. To set it up in larger quarters as a school of architecture, sculpture, and painting, is to set up, under the same name, an entirely different institution for different objects; and in reality it would be far better to alter the title of the establishment and call it "The British School of Art at Rome," for that is what it will be if carried on upon the lines proposed. And such a school, as we have already pointed out, needs an artist, and not an archæologist, as director. The whole scheme, however, must be regarded as rather *in nubibus* for the present, for there is no certainty as yet whence and how the funds will be forthcoming to carry on such an establishment.

The report on London Traffic, which was issued early in the year, had this importance in an architectural sense that it took into account the desirability of having a comprehensive and unified scheme for laying out new roads and widening old ones within the borders of Greater London; an idea of course often urged, but not very often included in blue books. It was a coincidence that the same issue of this journal which discussed that report also contained a noteworthy paper read by Mr. Waterhouse at the Institute of Architects on the architectural development of London, suggesting the appointment of a borough architect (not "surveyor") by each of the boroughs of London, who should advise on the most effective treatment of the architecture within their own borough, subject to the comprehensive direction and advice of a supreme advisory architect attached to the London County Council. These architects were not to be merely paid officials debarred from other practice; they were to be the most eminent architects of the day, selected as such, but remunerated on specially agreed terms for their advice. The suggestion was not adequately discussed at the meeting at which the paper was read, but it deserves to be recalled as a suggestion which ought not to be forgotten, and the adoption of which might have the most beneficial and far-reaching effects on the architectural improvement of London.

The question of the St. Paul's Bridge has been left in an unsatisfactory condition. Whether the bridge will ever be built at all seems now somewhat doubtful; at all events we may take it as being for the present indefinitely adjourned. Those who wish to see it made an axial approach to the dome of St. Paul's can find little satisfaction in the result of the discussion which has taken place on the subject. What strikes one most in reference to it is that no promise has been given as to the proper consideration of the design of the bridge itself, apart from the question of the line which it is to take. Yet the design of an important bridge over the Thames is a most serious question as a contribution to London architecture. A bridge is susceptible of very fine architectural treatment, and may in this sense prove to be either a noble addition to London architecture, or something very much the reverse. It is significant of the manner in which we regard such things at present that the whole discussion on the St. Paul's Bridge has turned on the question of its line in relation to traffic, and that of its architectural design has been almost lost sight of. The first thing which the official promoters of the bridge ought to have done would have been to show us their ideas as to its design, and intended appearance; but that was the last thing they thought of.

The addition of new rooms to the National Gallery has had the effect, incidentally, of raising an important question as to the system of lighting picture galleries; and it must be admitted that in this respect the new rooms are proved to be a mistake in regard to lighting. Where the majority of the pictures have to be protected by glass, it becomes obvious that a method of lighting which leaves the centre of the room in the brightest light is a mistake, on account of the disturbing reflections caused. At the National Gall the mischief has now been done. It remains as a warn against repeating the same mistake in other similar cases

The subject of the naming of London streets has arou some attention during the past year, and with good reas When we compare London with Paris in this resp the contrast is striking. At every street corner in P the name of the street is put up in easily legible charact all in the same style of lettering. In London there numbers of street-corners with no name on them, where the names are written up there are all kinds different styles of writing. What is required is that ev street-corner should have its name; that the letters sho be well designed; and (in our opinion) that there sho be one uniform style of lettering for the whole of Lond Some of the borough councils object to this, and maint that each council has a right to consult its own taste lettering. If the domain of each council were mar off by a wall and gates from the next, there would something in this; but when, as is actually the case, side of a street may be in one borough and the opposite in another, it seems absurd to maintain this claim at expense of general uniformity. It is not unlikely, believe, that there may be a conference on this sub of street name-plates, under the auspices of the Instit of Architects; and if this does take place we hope result may be a scheme for the complete naming of Lon streets with name-plates on one uniform pattern, as Paris. It is an improvement that has long been wanted

To pass from a comparatively small to a very great s ject, we may suggest that the last great political ev of this year, the new partition of India and the transfe the Indian capital from Calcutta to Delhi, may prov great opportunity for architects. The change inclu practically the erection of a new Anglo-Indian city Delhi, coupled almost certainly with the erection of a cathedral and of extensive Government offices. India not at present largely provided with architects of tale and this new move may be the occasion of great opp tunities for English architects, who would do well keep their eye on the situation and be prepared to m the most of it. England is too full, and there seem to chances of fame and fortune in the new India.

Recent Acquisitions of Old English Furniture at South Kensington.

For the Victoria and Albert Museum, South Kensingt there have recently been acquired a number of import examples of old English furniture. To the collection English Gothic woodwork has been added a portion o rood screen of oak, still bearing traces of its original colo It dates from the late fourteenth or early fifteenth centu and the western front of the screen, of which this port formed the eastern, is still *in situ* in Tilbrook Chur Bedfordshire. The examples of Tudor furniture in Roo have been increased by the acquisition of four finely car bed-posts of the time of Henry VIII., and those of Elizabethan period in Room 52 by a writing desk ela rately inlaid with architectural designs of the type commo known as "Nonsuch" from their resemblance to the faç of the palace of that name built by Henry VIII.

The additions to the walnut furniture of the seventee century comprise a Cromwellian arm-chair, several Char II. chairs, including one very elaborate example, an chair of rare form intended for the use of a child (Room 5 Several important examples have been added to the c lection of marquetry furniture of the time of William a Mary in Room 55. Amongst these is a chest of draw with cabinet above, dated 1688.

To about 1700 may be attributed a recently acqui complete upholstered bedstead with curtains and cano from Welford-on-Avon, and a corner cupboard or buf of carved pine bearing the arms of Hicks, lately remov from an old house in Bristol. The latter of these t jects is to be seen in Room 56; the former is being prepared for exhibition. To the collection of eighteenth-ntury clocks in Rooms 55 and 56 have been added two -called "grandfather" clocks in dark green English cquer, both bought in Spain, one of which was given to e Museum by Mr. L. Harris; a similar tall-case clock, of ter date, in inlaid mahogany, of Lancashire make, given y Mr. Emile S. Mond; and a bracket clock of mahogany d olive wood.

The rare furniture of the early Georgian period, preously almost unrepresented in the Museum, is now ustrated by a choice carved and gilt mirror, the gift of r Edward Stern. This mirror closely follows the style the well-known architect and designer William Kent, d was probably designed by him for Frederick, Prince Wales. It is exhibited in Room 56. The chief addition the furniture in the Chippendale manner consists of an storical chair, being the President's Chair of Lyon's Inn, e of the old Inns of Chancery, the buildings of which ted from the early part of the eighteenth century and ere destroyed in 1862. This important example of mid-ghteenth century woodwork will shortly be placed on hibition.

The Empire Style in England.

The "Architectural Review" has done good service in blishing some well-illustrated articles on the Empire yle in England, as much interest is centred on this style st now, and there is a dearth of both illustrations and atter available for general study. In the second article the series, Mr. Richardson, speaking of English furture design of the early nineteenth century, says that ile the influence of Classic research lasted furniture sign was stimulated to an unprecedented degree; and en this influence waned, partly owing to the decline of terest in the Antique, and the consequent lack of an preciative audience, the character of movables and other chitectural accessories suffered. Chippendale, Hepple-ite, Sheraton, Thomas Hope, and Papworth raised glish decorative design to a very high position, succeeding their efforts in welding all that was noble in native aftsmanship to the best traditions of the Antique. The lmination of English furniture design was reached about e year 1830, or a little later. After this date the old ditions were interpreted in a coarse—nay, almost brutal hion; a hotch-potch style of furniture and decoration lowed, because the controlling and sustaining influence a definite style was ignored. For convenience, the style the Regency is named "Empire"; in reality the furure of the period epitomises the tendencies which formed style. The desire expressed on every side was for corative art approaching in beauty, as well as in erest and utility, the art of Ancient Greece.

Cockerell's researches at Bassæ and the acquisition of Elgin Marbles fanned the flame of emulative design, d the giants of the day were equal to their task, first osing their material, and then composing the heteroneous oddments into a homogeneous whole.

But when Queen Victoria ascended the throne architects d one with another to display their ambidexterity, rking in the Classic manner with one hand, and attempt-Gothic with the other. Many joined distinct camps, nceforth to wage unceasing war. So came about the lusion of concerted action and the general decadence of in England. Reviewing the position of English decoive art at the close of the first decade of the twentieth tury, we have no cause for congratulatory remarks. uses have been built and will continue to be built without y regard to the furniture which should adorn them. shion in furniture is controlled not by the man of culture e having been replaced long since by the great em-ium. The more reason, therefore, that architects uld know something about decoration; though they ve been apathetic enough to allow this branch of their fession to pass into the hands of commercial firms.

"It seems only yesterday," says Mr. Richardson, "that late William Morris brought his Windsor-chairs from their proper situation in the kitchen to a position of incongruity in the drawing-room. Nowadays even greater offences against good taste are daily perpetrated. Internal decorations are ordered much as ready-made clothing is obtained from the shoddy tailor. Architects having designed the carcase of a structure with more or less ingenuity, then hand over their building to the tender care of the mere decorator, in whose hands creases are smoothed out and constructive features concealed. Hence we now have more examples of pseudo-Queen Anne, Georgian, and Adamesque decoration than was ever achieved during the spacious days of the eighteenth century.

"However, there is a growing catholicity of taste among art lovers which augurs well for the future development of decorative art in this country. The various revivals have at least brought this about. It cannot be denied that certain artistic triumphs are inherent in every style. Yet when all the eulogies have been sounded in praise of eclecticism there still remains the thought that the most polished works of antiquity and the Renaissance had their origin in the simplicity of the principles from which they were evolved. The lessons to be derived from a collection of antique objects of art are innumerable. Each separate specimen radiates inspiration, silently explaining the thoughts and aspirations of the vanished artist.

"A whole gallery of sculpture confuses and unsettles the mind. It is a relief to fix one's attention on a single example. And the same applies to a gallery of paintings, to a wall-case of bronzes, or, in a larger sense, to the vast array of past historical styles. But the danger of losing our artistic equilibrium, even supposing a certain balance of taste to have been gained, is extremely great. Like the bee, artistic genius travels from flower to flower, hovering longest over the most attractive, avoiding the sinuous weed, and finishing its labours in the hive of industry. There is no reason why the spirit of art should not extend its influence to all great mechanical works—well-designed machines for transport truthfully expressing their purpose, bridges and viaducts monumental in character, stations and hotels representing the commercial progress of the day. A mere donning of the antique cloak will not suffice to advance modern art. To help artists in the great neo-Classic movement which is daily becoming more apparent it will be necessary to enlist the sympathy of the whole educational body. Petty prejudices for ornamental trivialities must be shorn, and sound criticism given and taken in a spirit of fair-minded enthusiasm. Collective rather than individual effort must be encouraged in order to secure to Britain the hegemony of the sphere of art."

Building Schemes and the Law.

Mr. W. H. Taylor, architect and barrister, read a paper on "Some notes on the law relating to building schemes" before a recent meeting of the Nottingham Architectural Society.

The broad general principles of the law affecting development schemes, he said, were quite well known and understood by architects and owners of property. "But when one descends to individual cases, one not infrequently finds that these principles are difficult to apply. They are often of a seemingly hampering and vexatious character, restricting the natural rights of the owner and circumscribing the range of the designer's scope. Then one is tempted to a feeling of outraged liberty, forgetting that what appears to be a hardship on the individual is generally for the benefit of the community." Mr. Taylor then referred to the difficulties that often occur when it was proposed to develop building land and form new streets. When those matters were satisfactorily settled it sometimes happened that a building owner found that, owing to the interpretation of the by-laws of the local authority, he was obliged to set back his building line, which made it impossible for him to use his plot to the best advantage. Another vexatious point at times was the interpretation of local authorities as to air space at the rear of buildings. Mr. Taylor quoted the latest decisions in the Law Courts relating to all these matters, and with the aid of a number of coloured diagrams showed clearly the auguments on both sides. It was very difficult to draw up any rules from these cases, as the legal decisions differed and the by-laws of different authorities varied. He stated that the recent by-laws of the Nottingham Corporation had been carefully compiled, and in his opinion were drawn up to prevent absurd and vexatious interpretations. In conclusion, he strongly advised that whenever possible the building owner should instruct his architect to consult the surveyor to the local authority before much progress is made with the scheme and so save waste of time and labour and possibly an expensive and unsatisfactory law case.

Calculations in Building Construction.

Before a meeting of the Associate Section of the Edinburgh Architectural Association, Mr. John Wilson, architect to the Local Government Board, recently delivered a lecture on "The Calculation of Steel Beams." After giving the weights of the various materials entering into the construction of modern buildings, he explained the method of calculating the strength of beams, and urged that in calculating the weight of a wall voids should not be deducted, as the weight of wall is more or less concentrated at points on either side of the void, so that one is allowed to go for the other. The entire weight of a wall resting on a beam did not as a rule come on the beam when there were walls on either side into which the beam was built. It was transmitted down through the wall at an angle of 45°. Nowadays it was unnecessary to design ordinary compound beams. It was sometimes stated that two beams placed one on the top of the other were equal to one beam of the combined depth of the two, but this was a fallacy.

A case might arise where it might be cheaper to use a plate or box girder over an excessively wide span. In tall buildings it was customary to reduce the column loads somewhat from the loads assumed in calculating the floor beams. This was done on the theory that it was quite impossible for the entire floor area on every storey to be loaded to the maximum limit at the same time. For all buildings, except warehouses, it would seem to be good practice to design the columns to carry all the dead load and 75 per cent. of the assumed live load. Thus, if in an office building the dead load or weight of the floor construction were taken at 60 lb. and the live load at 80 lb. per ft. super, the load on the columns would be 60 plus 60—120 lb. per ft. super. In some cases the reduction would be even greater, this depending upon the live load assumed and the position of the columns in the building, the reduction on the lower storeys being greater than near the top. When steel joists required to be put into concrete foundations they should be placed near the bottom of these, because the reinforced strength was required in this position to resist the tensile strain. For fire-resisting purposes the reinforcement should not be less than 2 in. up from under side of the concrete. Stone should never be used as the matrix for concrete floors, as it spalled when subjected to a heat. Let them use broken brick, slag, or clinker—good ashes made perhaps the best matrix. In France and in America, until lately, very light sections of joists were used compared with those used in Great Britain. Theoretically both the French and the Americans were right, but they did not allow for what was known as secondary stress, which was too often ignored. This stress was set up in the case of hurricanes.

The Construction of Two Great Terminals.

New York affords two recent examples of difficult constructional undertakings possessing wide interest—namely, the great passenger terminal of the Pennsylvania Railroad, which was completed more than a year ago, and the Grand Central terminal, now in progress. Both have equal facilities for passenger traffic, both have large areas of depressed track and foundations built in dry rock excavation, and both are built of masonry and structural steel. In both preliminary working plans were developed to ensure the proper sequence and correlation of operations. But in t
case of the Grand Central Terminal great difficulty h
arisen and elaborate operations have been necessitated
the construction of the new terminal on about the same s
as the old without interfering with an enormous passeng
traffic. Many miles of tracks had to be shifted to n
positions at two levels in depressed yards excavated to
maximum depth of over 50 ft. below the surface, ma
adjacent buildings were underpinned, several long str
viaducts have been carried across the excavation, comp
cated systems of municipal and private pipes and condu
were shifted or entirely reconstructed, and the main stati
and many large auxiliary buildings erected. The work w
commenced by an experienced contractor, who was great
hampered, especially in the general excavation, by t
movements of regular and special trains, so that he fina
resigned his contract, since which time the work has be
carried on by the engineering corps of the railway.

The excavation and track work have been executed,
gether with the overhead viaduct work, in successive lon
tudinal strips gradually covering all the ground from t
east to the west side of the terminal. The great stati
building is under construction in the same manner, all of t
different classes of work being under the charge of a termi
engineer, associated with electrical and structural engine
and other specialists, directing the company's forces.

The Pennsylvania Terminal station occupies a new si
which was excavated for the construction of the main buil
ing, enabling it to be treated as a whole and all the successi
steps taken in logical sequence. Many of the princi
operations were performed by a general contractor with
staff in constant association with the railroad enginee
supervising engineers, architects, and numerous sub-co
tractors. The two terminal works were so wholly unlike
character and in execution that, while they are not co
parable in most respects, they show how much less difficu
it is to construct a terminal on a new site than to enlar
one in service.

Holyhead Breakwater.

The large amount of work of a preliminary nature enter
upon in August in connection with the replacement
wastage in the rubble mound on the magnificent brea
water at Holyhead has almost been completed, and ve
shortly the work of conveying the stone from the quarri
to the Breakwater, and depositing it on the rubble moun
will be commenced. The breakwater, completed in 187
after taking close upon thirty years to construct, has wit
stood some of the severest storms that have ever be
experienced on these shores, this being largely due to t
high foreshore and great width of the rubble mound up
which the superstructure has been built.

Owing to the gradual lowering of the foreshore by co
stant wave action and attrition, the Board of Trade, acti
upon the advice of their engineers, decided in the earl
part of this year to restore the rubble mound to half-ti
level, with the result that several contractors experience
in harbour work were invited to send in tenders for t
work, the successful firm being Messrs. S. Pearson and So
Ltd., of Westminster. Before any stone could be broug
from Holyhead Mountain, the contractors had to lay
railway of the standard gauge from the quarries to t
extreme end of the Breakwater—a length of nearly fo
miles, when all the sidings and loops are included.

It is proposed to deposit about 100,000 tons of stone, an
in order to obtain this quantity of large stones it is est
mated that over 150,000 tons will need to be quarrie
All the stone will be weighed before being deposited, and f
this purpose a twenty-ton weighbridge has been erecte
over which all the wagons will pass, and the weights r
corded by the weigh clerks. The work has to be complete
by the 31st January, 1913. At present it gives employme
to some 100 men, but as the operations get into fu
swing the number of men employed will be between 20
and 250, the bulk of whom will be local. The amount vote
by Parliament for the work was £54,000.

GARDEN SUBURB HOUSES

SELECTED EXAMPLES

from
Hampstead & Gidea Park

SUBURBAN HOUSES AT HAMPSTEAD AND GIDEA PARK.

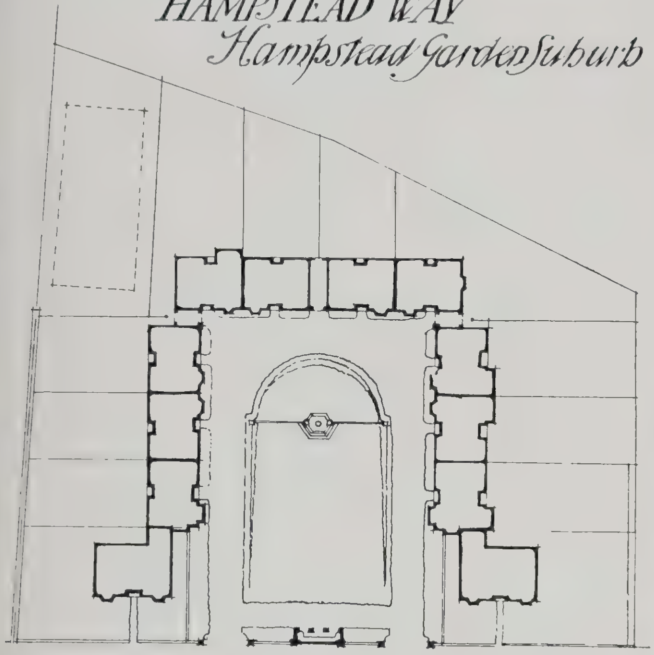
A WIDESPREAD dissatisfaction with the middle-class house as provided in suburban areas has resulted in the formation of a number of colonies of small houses on the outskirts of various towns throughout the Kingdom, which houses have been designed by architects possessing a different outlook and a separate taste from that of the speculating builder. Purely socialistic at first, the movement has now grown to quite individualistic character, the essential aim in every case being to secure a small house having some architectural quality: and as the experiments made in different places have proved to be very popular and successful, there is every likelihood that the ideas embodied in garden suburbs and garden cities will find an ever-increasing support, more especially since the passing of a Town Planning Act has given an official patronage to the movement. This being the case, it has been thought that the representation of a selected number of small houses in two typical new areas, namely, the Hampstead Garden Suburb at Golder's Green, on the north-west fringe of London, and the estate at Gidea Park, near Romford, in Essex, will be not only of much interest to architects and builders, but to the former at least will be of great practical value. More than forty houses are here shown by means of photographs, plans, and details specially prepared for this issue. There is no necessity to give particulars of each separate house, for the reason that, as regards their construction, they are all built of brick, either left plain, rough-cast, or whitened, and the roofs covered with red tiles: while the accommodation provided can be best studied from the plans themselves. A few general remarks, however, may well be set down.

The Hampstead Garden Suburb is the earlier of the two schemes, having been started about four years ago. The houses here range from large to small, and have been designed by a number of well-known architects. In the majority of cases they are detached or semi-detached, though, in addition may be seen many cottages built in rows, some of them very successful. Moreover, the lay-out includes a number of "closes," around which the houses are grouped. They have not been built in competition, within any fixed limits of cost—such, for instance, as the £150 cottages elsewhere—but to suit the various incomes of the architects' clients or of the occupants whom the promoters had in view. On the other hand, at Gidea Park, which is the creation of the last year or two, the majority of the houses were erected within certain specified limits of cost, which were closely observed; for examples, the house by Mr. Welch in Meadway (page 761) cost £400, and that by Mr. Clough Williams-Ellis in Reed Pond Walk (page 751) cost £525. At Gidea Park there was a competition for the best detached house to cost £500, and for the best detached cottage to cost £375. In the former class, the house by Mr. Geoffry Lucas (page 701) secured the Gold Medal and £250, that by Mr. Longden (page 711) being placed second, and Mr. Curtis Green's (page 715) highly commended; while in the second class, Mr. Crickmer's house (page 713) secured the Gold Medal and £200, and Mr. Welch's (page 761) the second prize of £100.

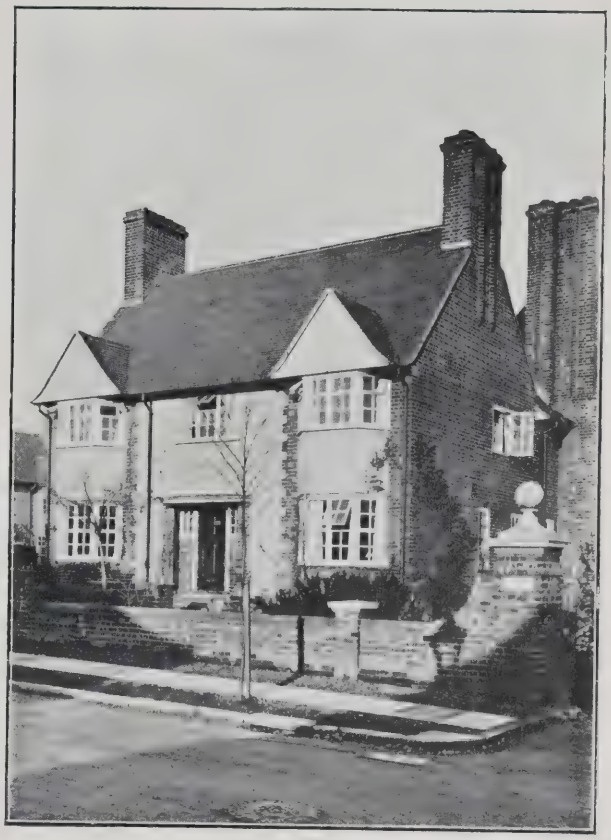
In studying the houses as a whole, both at Hampstead and at Gidea Park, it will be noted that the country cottage type has been generally favoured, though in some instances Georgian examples have provided the basis for design. And in this matter there is certainly much room for criticism, for it is undoubtedly a mistake to attempt to house in "cottages" people who are not cottagers: hence we feel greatly in sympathy with those architects who have set aside the customary cottage types of design and have taken instead a type which is more properly akin to what may be described as the cultured means and manners of the middle class, for whom these houses are intended.

A visit to either the Hampstead Garden Suburb or to Gidea Park will at once show that the houses are a great advance on those commonly provided in suburban areas. They are soundly built of good materials, have tasteful chimneypieces and other furnishings, and possess a good deal of architectural interest. The fault in the majority of them lies in the size of the rooms. These, for the most part, are far too small, and in this respect are witness to the fact that there is a reasonable limit of cost below which it is impossible to fall, if a satisfactory house is desired. The names of some well-known architects are coupled with this deficiency, for on going over their houses, so admirable from without, we are astonished at the small scale on which the rooms have been set out, so that we find dining-rooms which are uncomfortably filled by even a moderate-sized table, and bedrooms in which mere passages of space are left after the furniture has been put in place. It is all, of course, a question of cost, but, as stated above, there is an irreducible minimum which should never be forgotten.

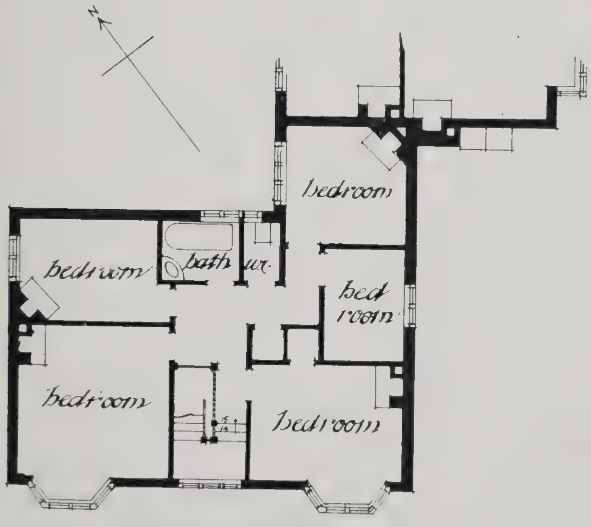
Square of twelve houses HAMPSTEAD WAY Hampstead Garden Suburb



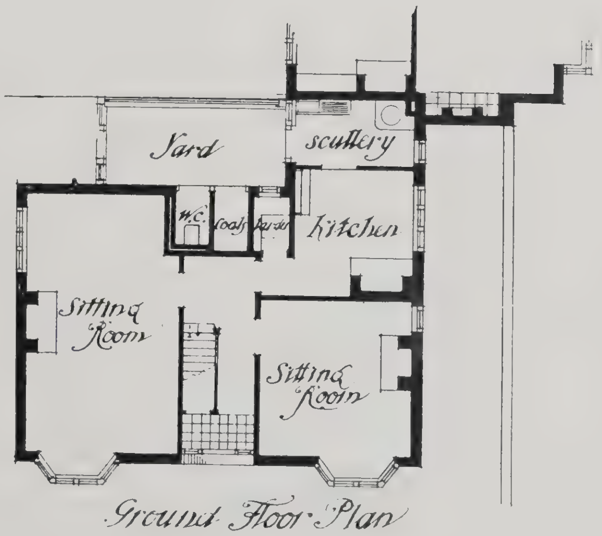
SITE PLAN



Geoffry Lucas Archt.



First Floor Plan



Ground Floor Plan

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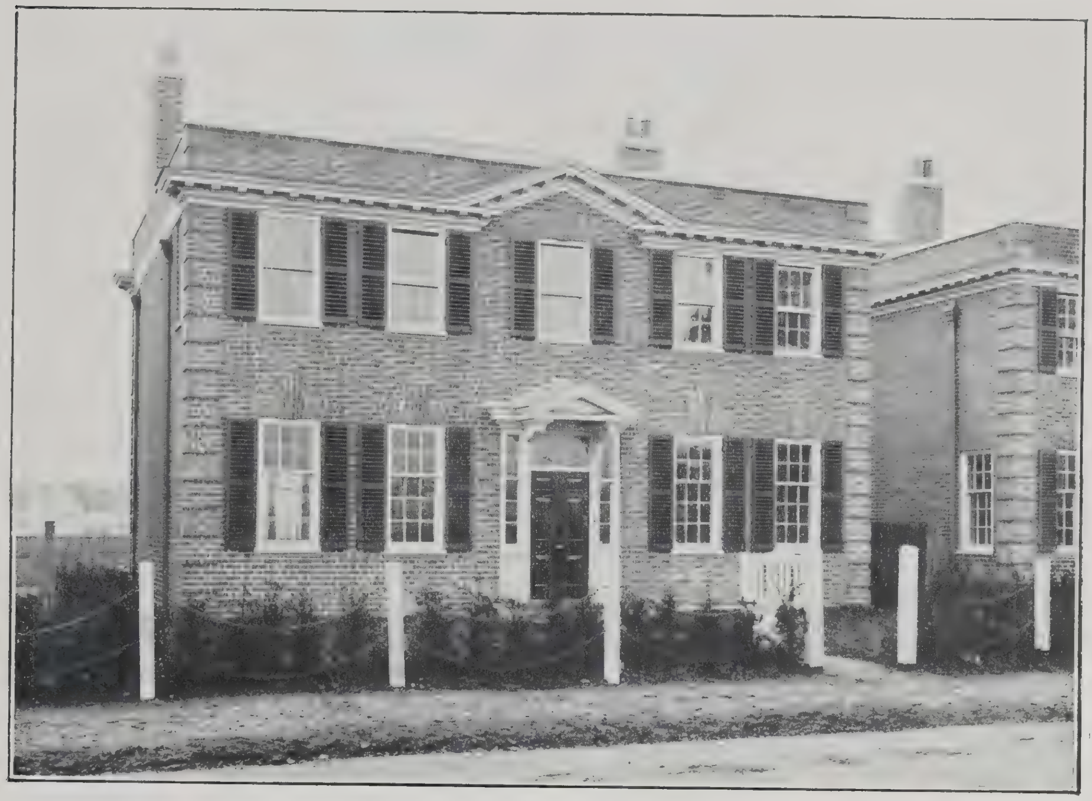

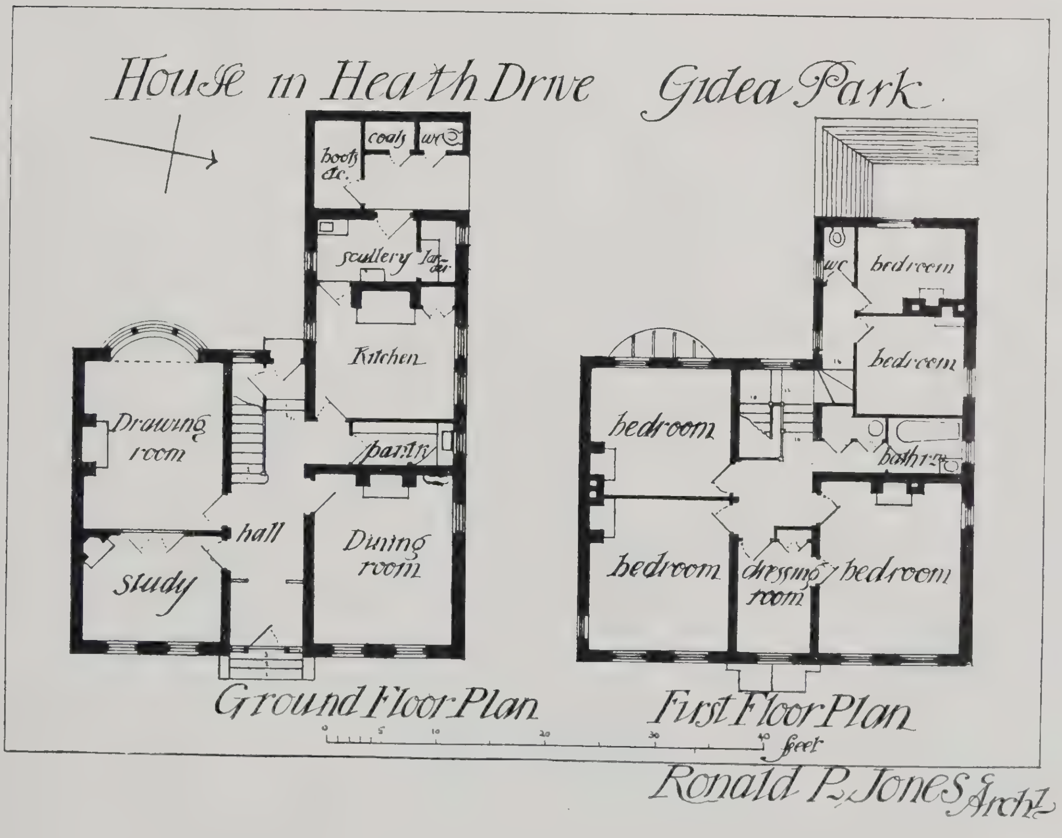
House in Heath Drive Gidea Park.
boots &c.
coals
wc
scullery
larder
Kitchen
pantry
Drawing room
hall
Dining room
study
wc
bedroom
bedroom
bedroom
bathrm
bedroom
dressing room
bedroom
Ground Floor Plan
First Floor Plan
0 5 10 20 30 40 feet
Ronald P. Jones Archt.

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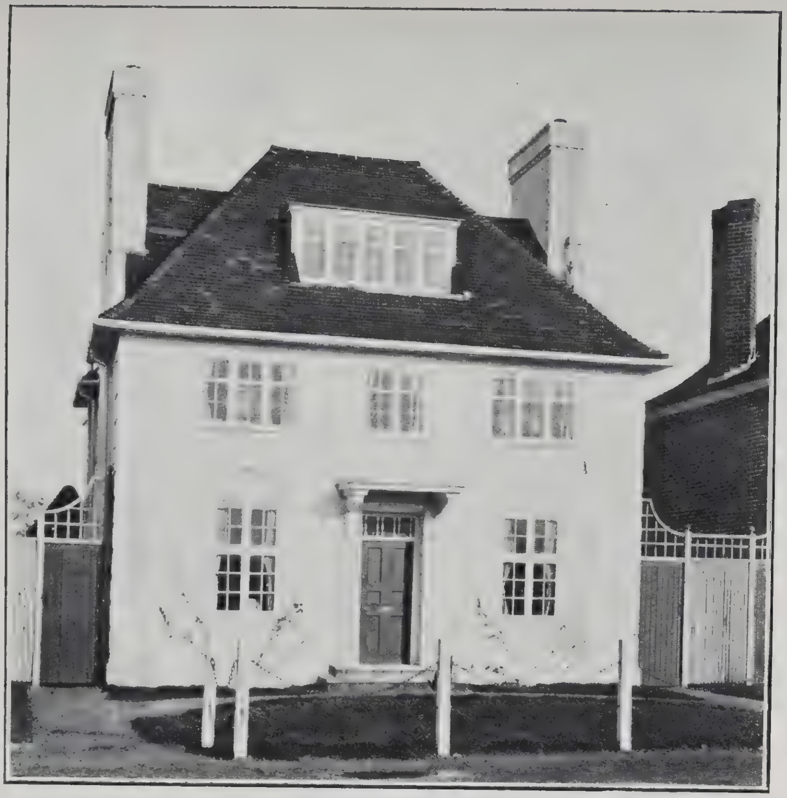
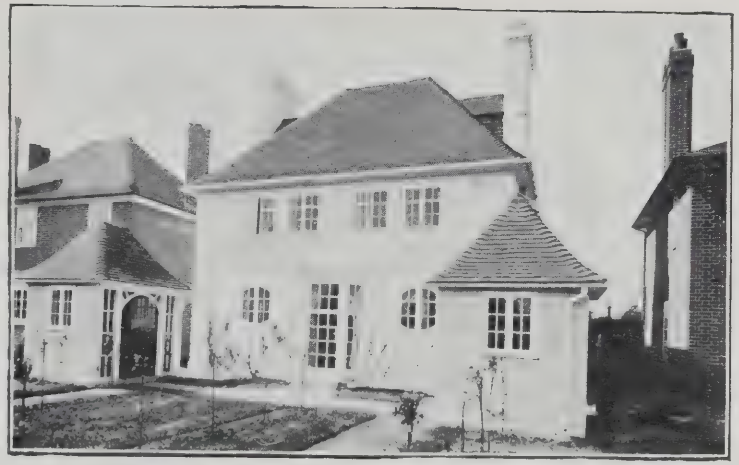
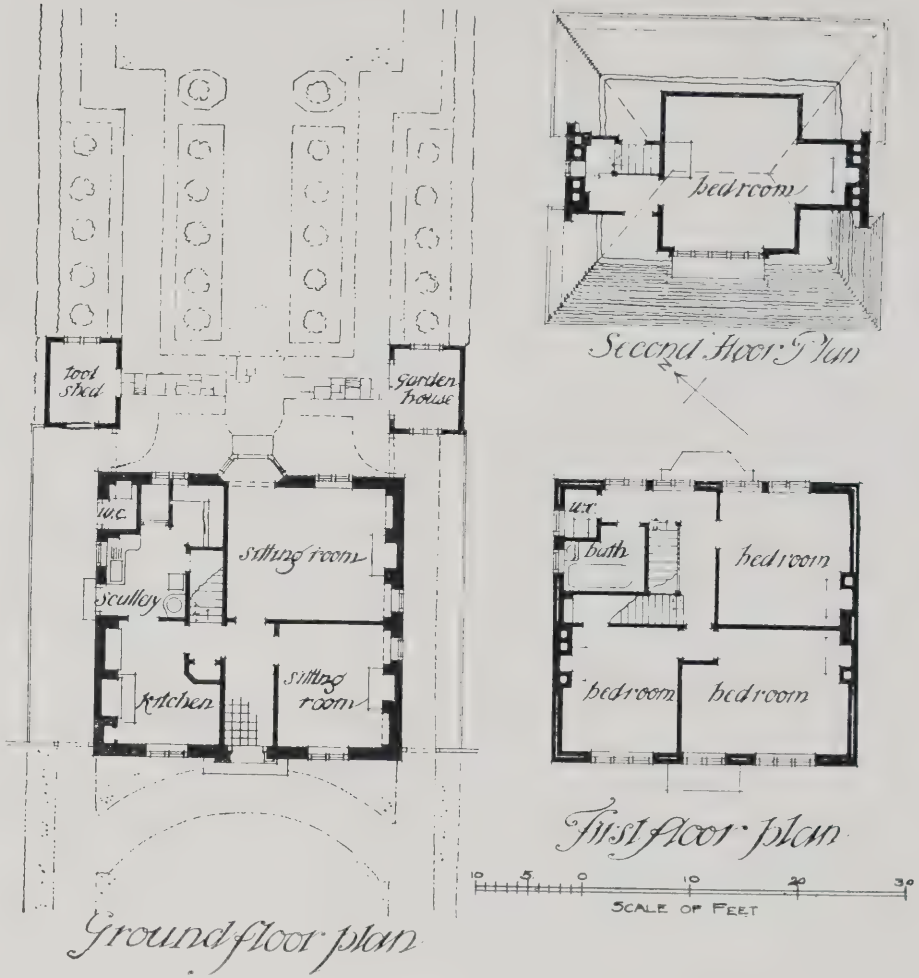
HOUSE IN PARKWAY GIDEA PARK







Geoffry Lucas Archt

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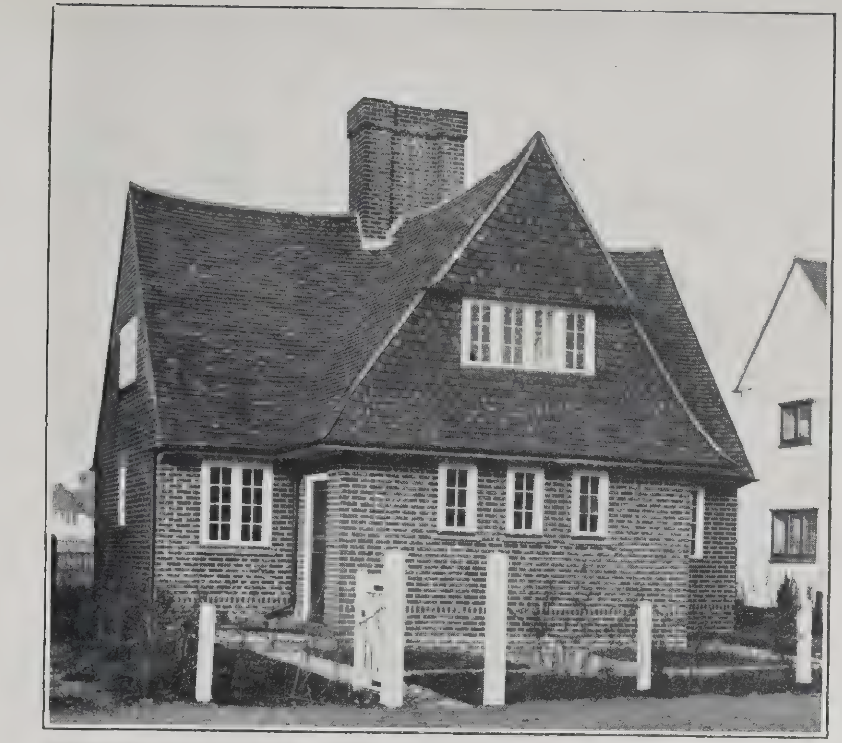
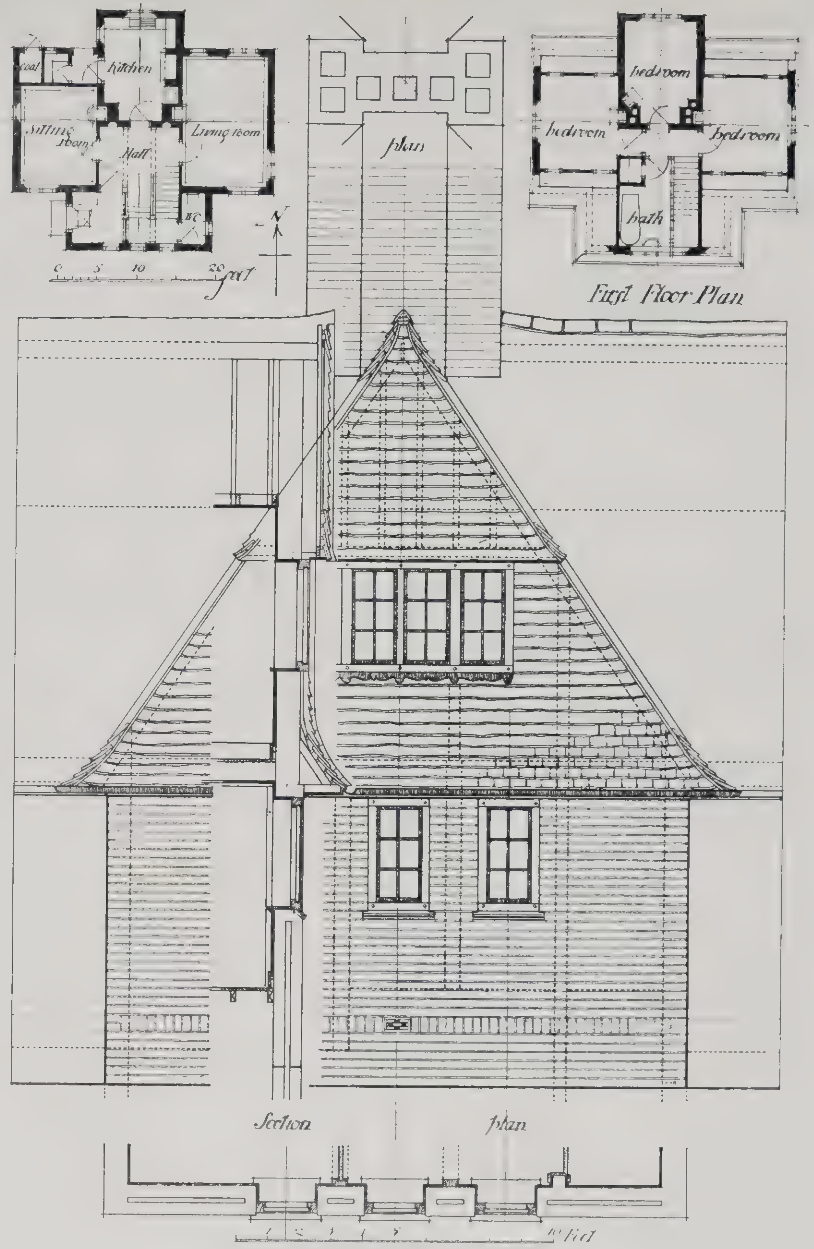
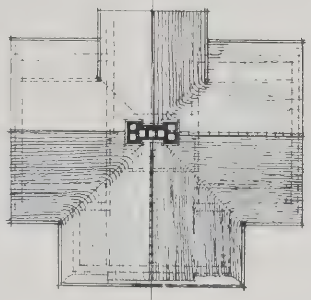


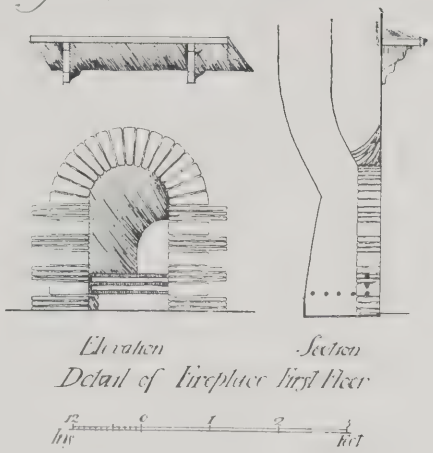


Cottage in Meadway Gidea Park

Van't Hoff & Maxwell
Archts



Roof Plan



Detail of Fireplace First Floor

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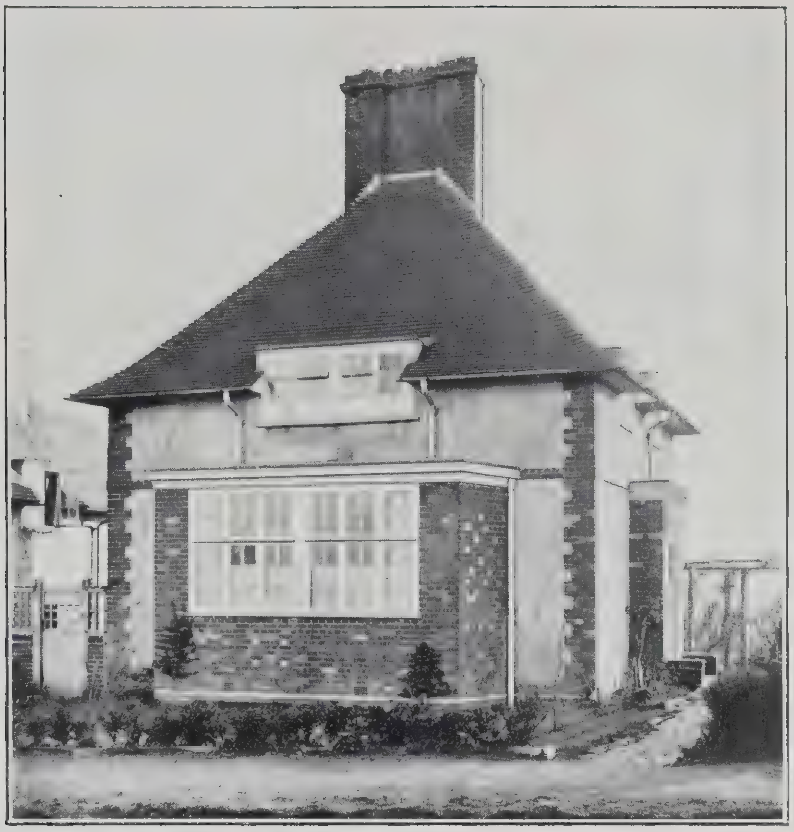
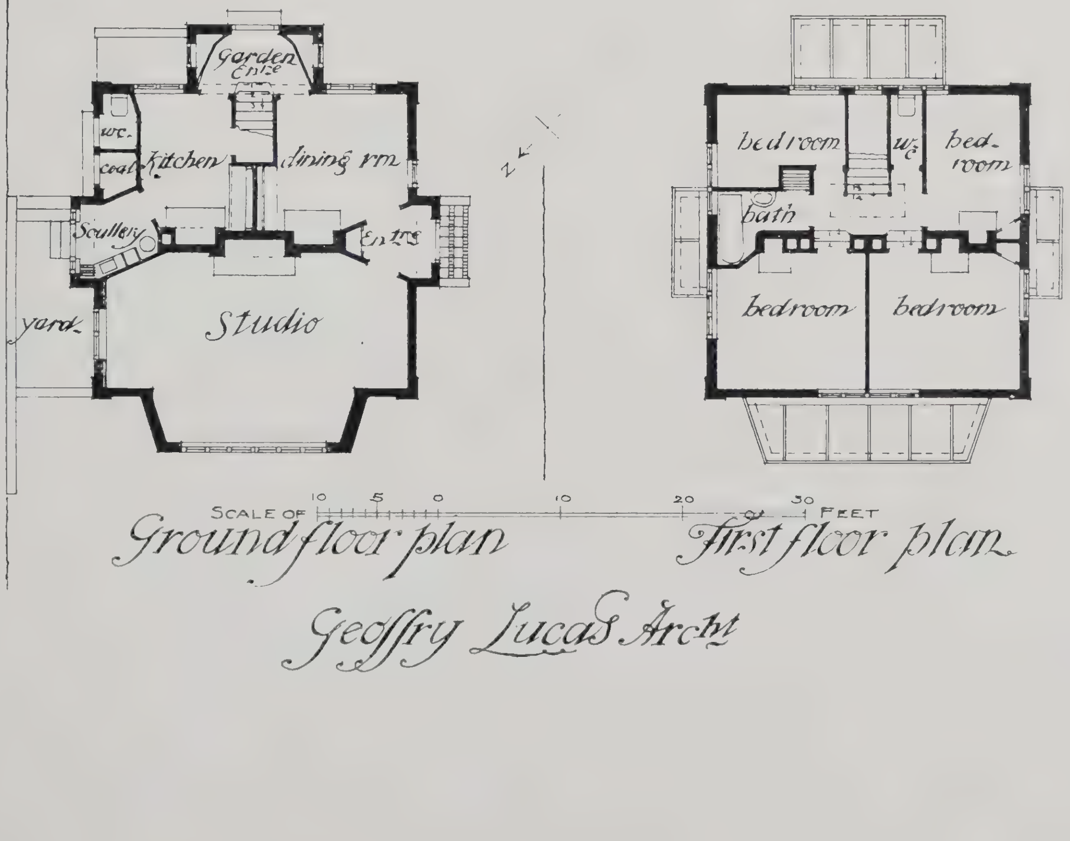


HOUSE IN BIGWOOD RD HAMPSTEAD GARDEN SUBURB



Ground floor plan First floor plan

Geoffry Lucas Archt

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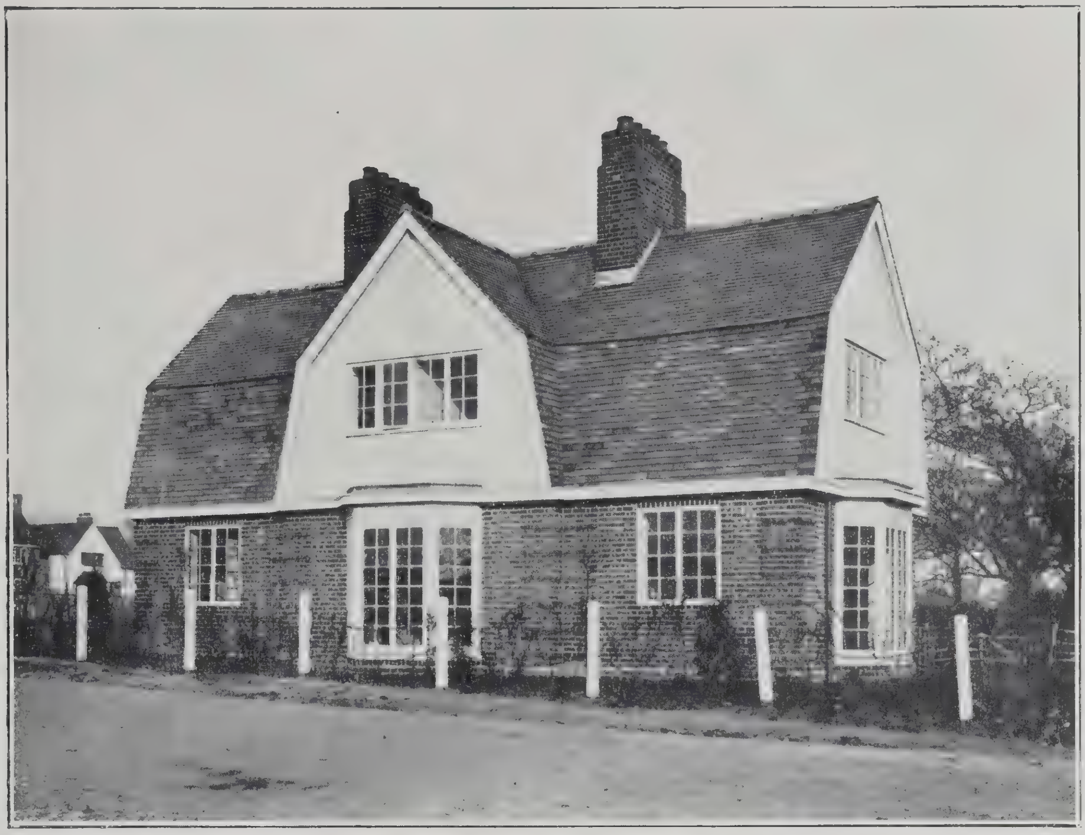
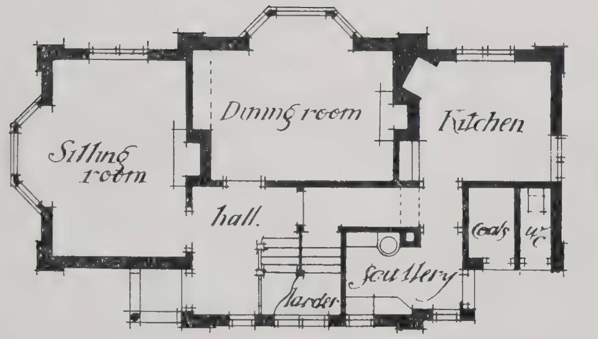
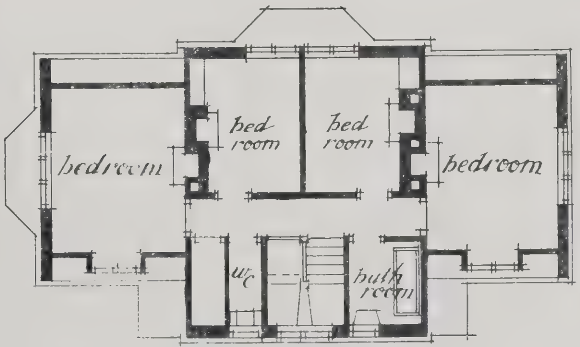


House in Parkway
Gidea Park



Ground Floor Plan



First Floor Plan

Reginald T Longden
Archt.

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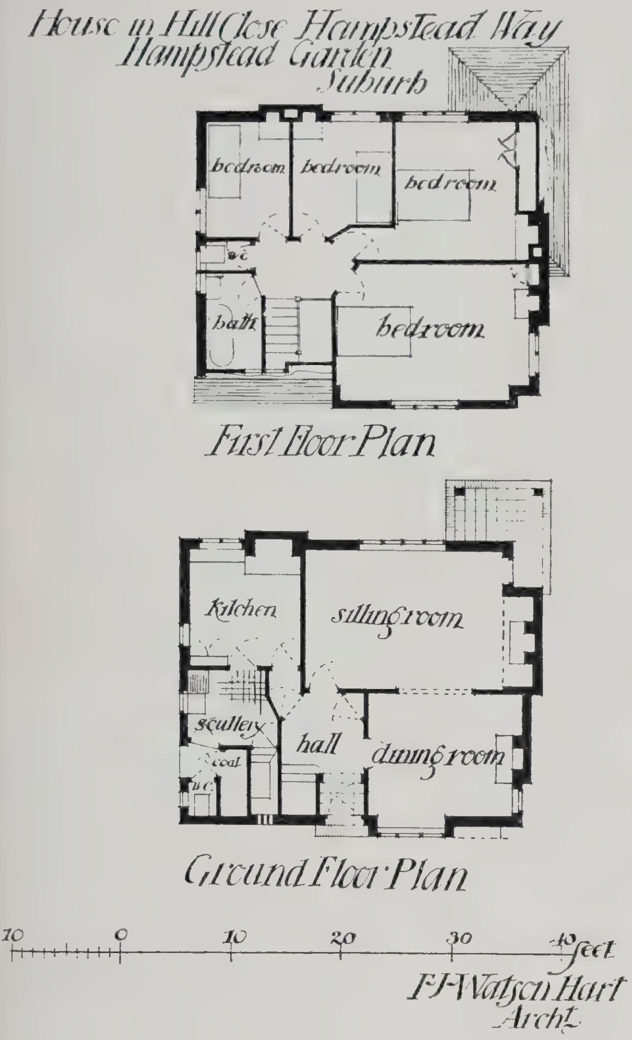
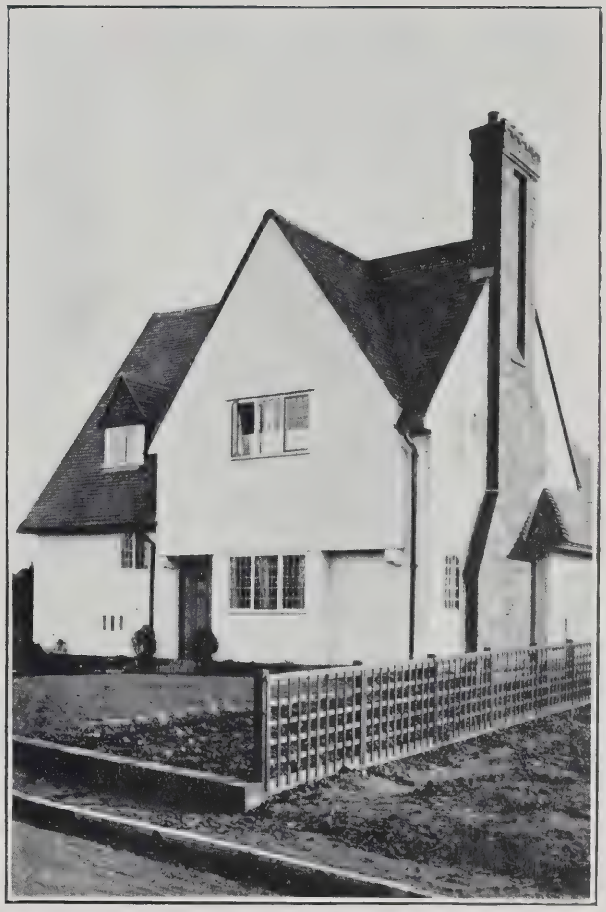
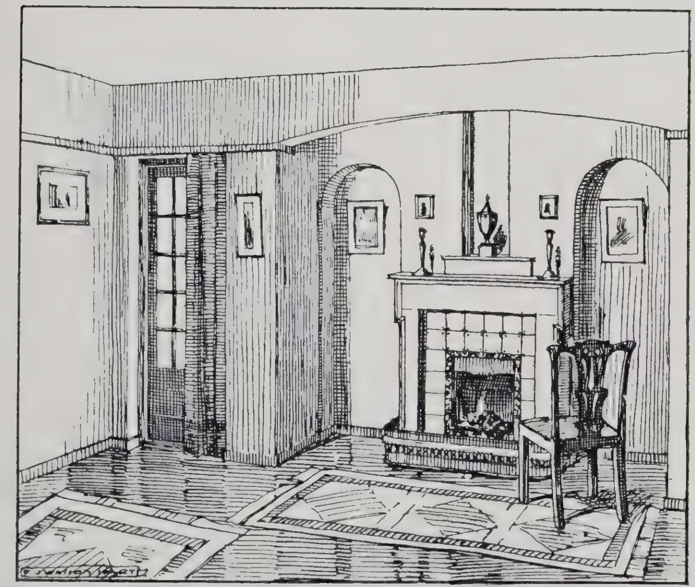
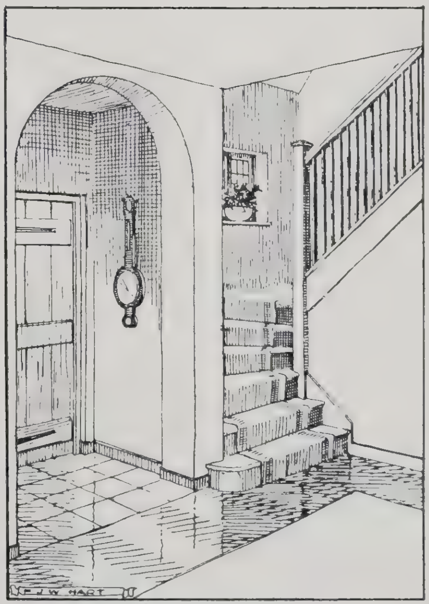






Fireplace in Sitting room



Hall & Staircase

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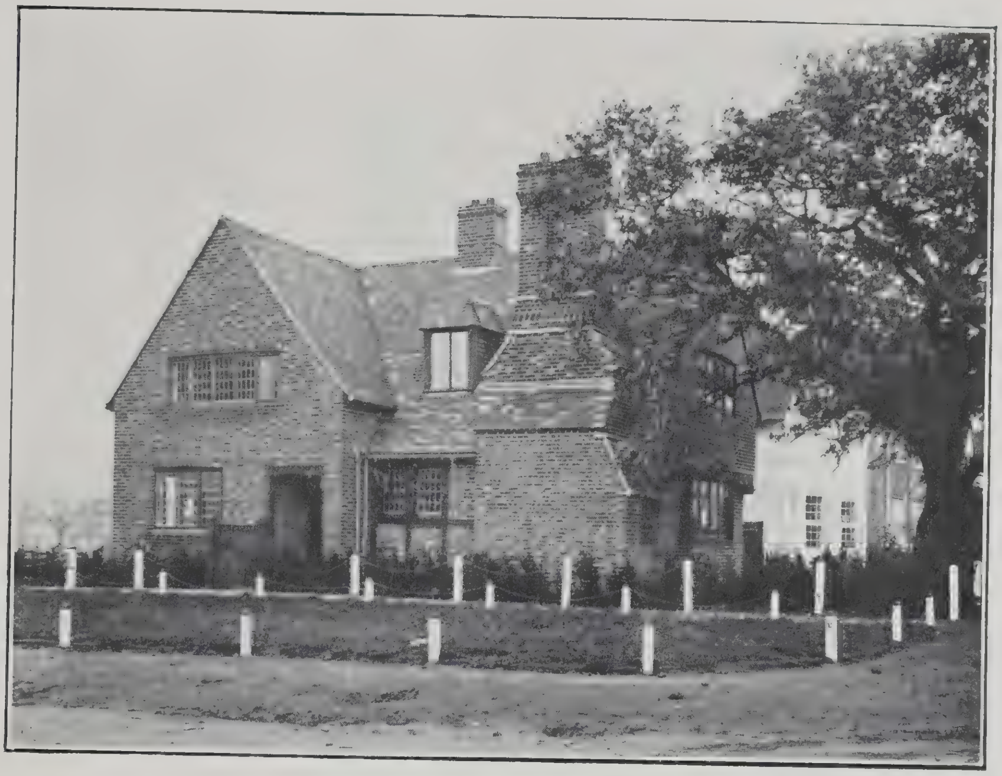
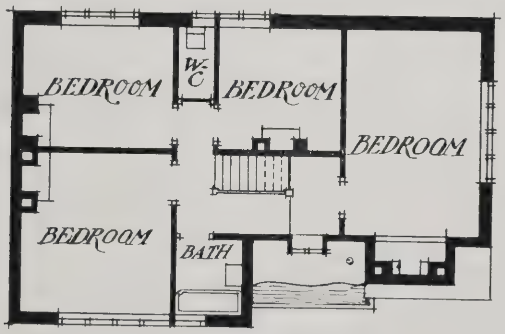
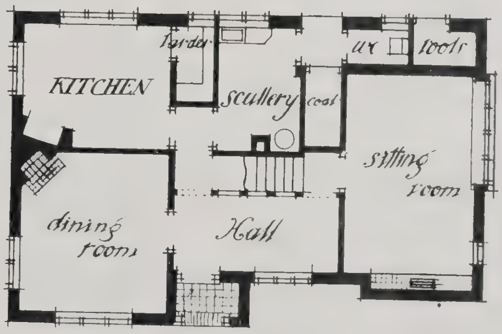


HOUSE IN REED POND WALK GIDEA PARK



FIRST-FLOOR PLAN



GROUNDFLOOR PLAN

10 0 10 20 30 feet

Reginald T. Longden
Archt.

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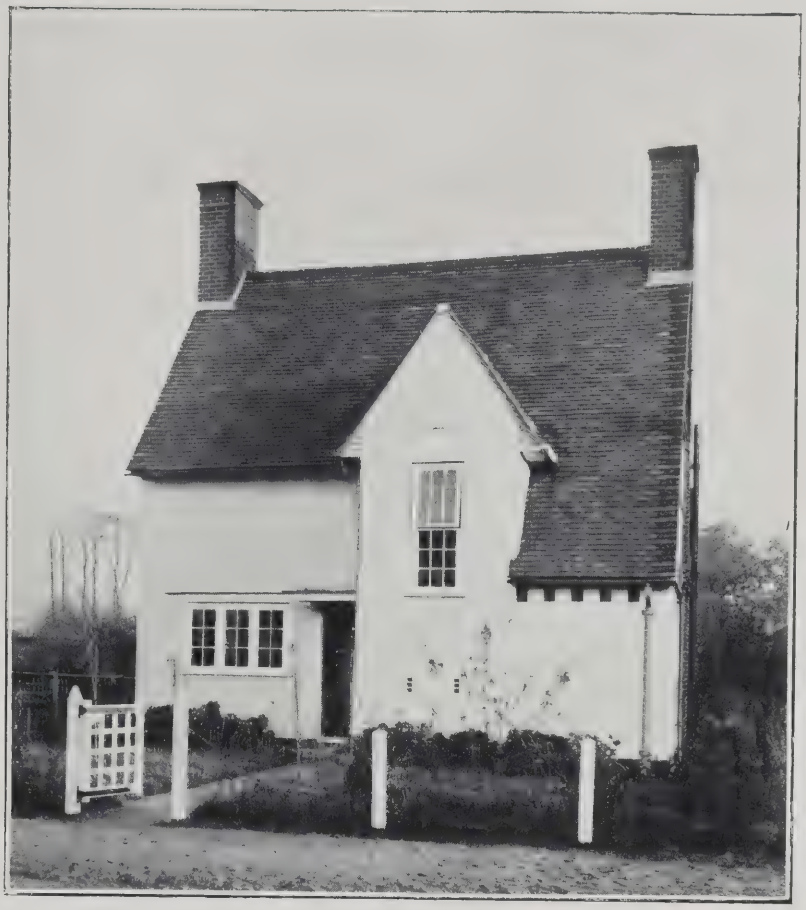
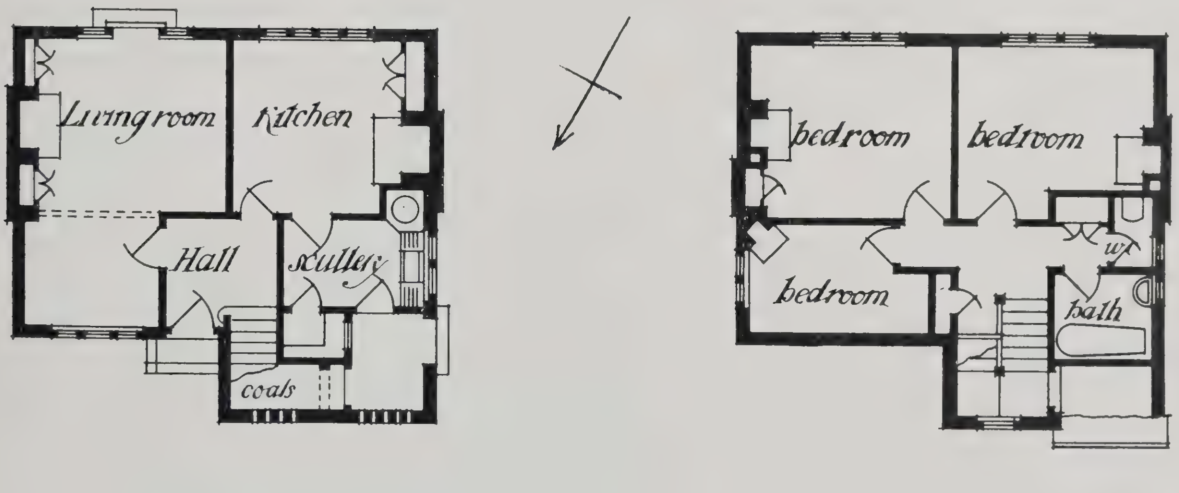


House in Meadway Gidea Park

C.M. Crickmer Archt.



Ground Floor Plan

First Floor Plan

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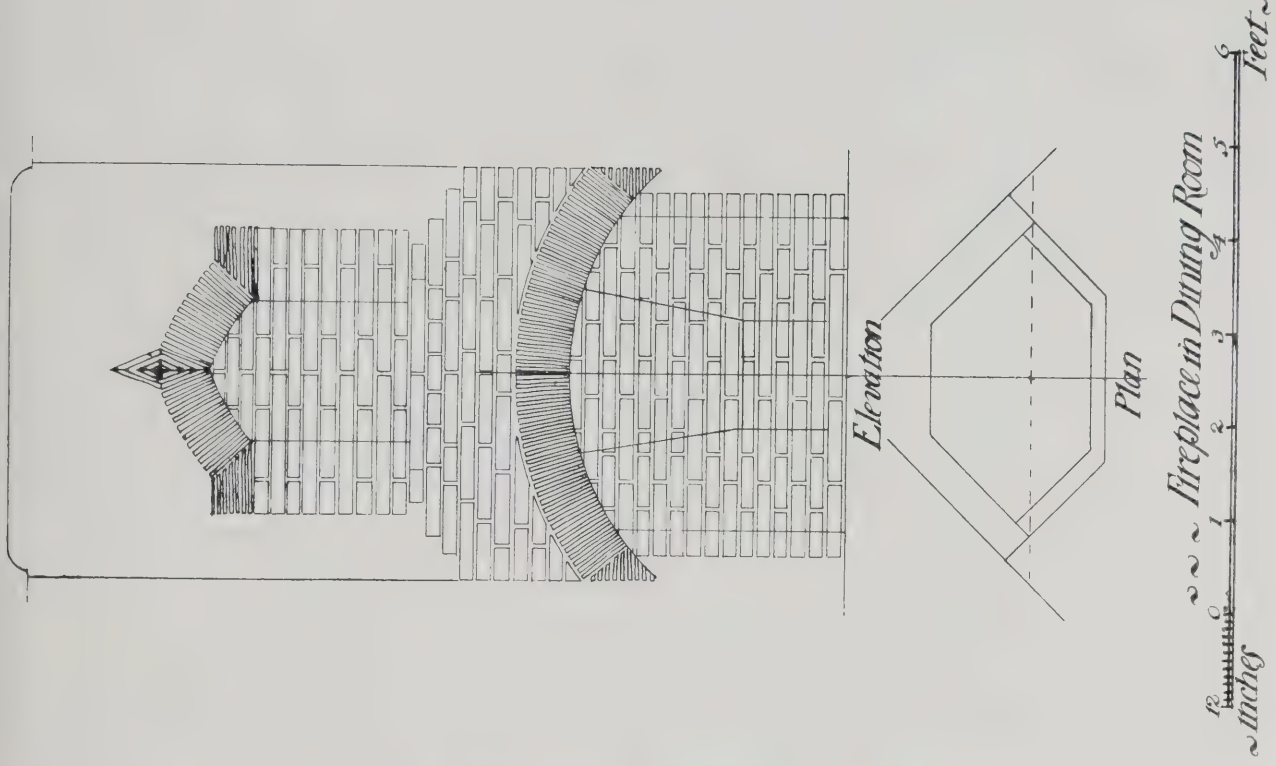
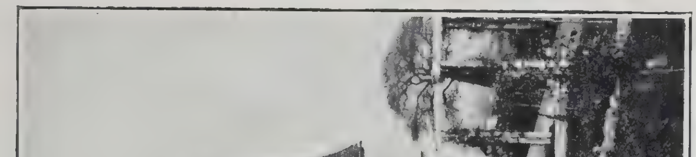
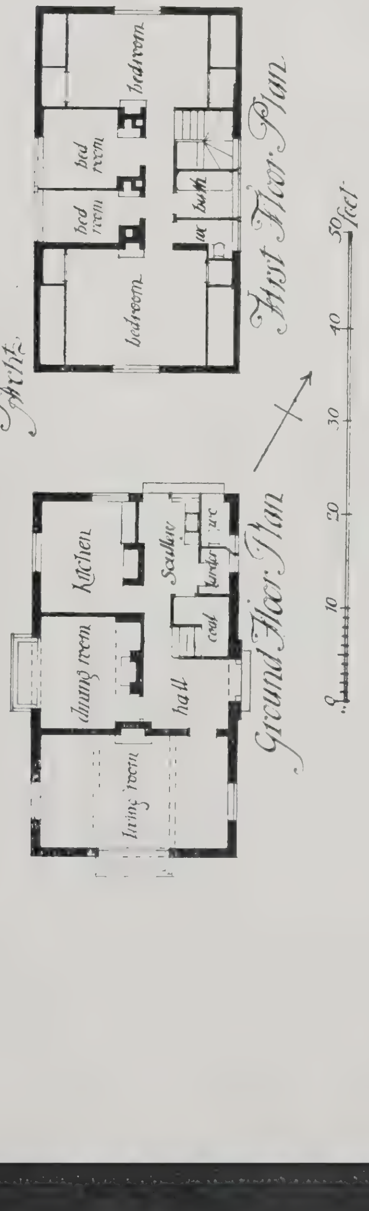


Fireplace in Dining Room



HOUSE IN HEATH DRIVE GIDEA PARK

H. Curtis Green Archt.



Ground Floor Plan

First Floor Plan

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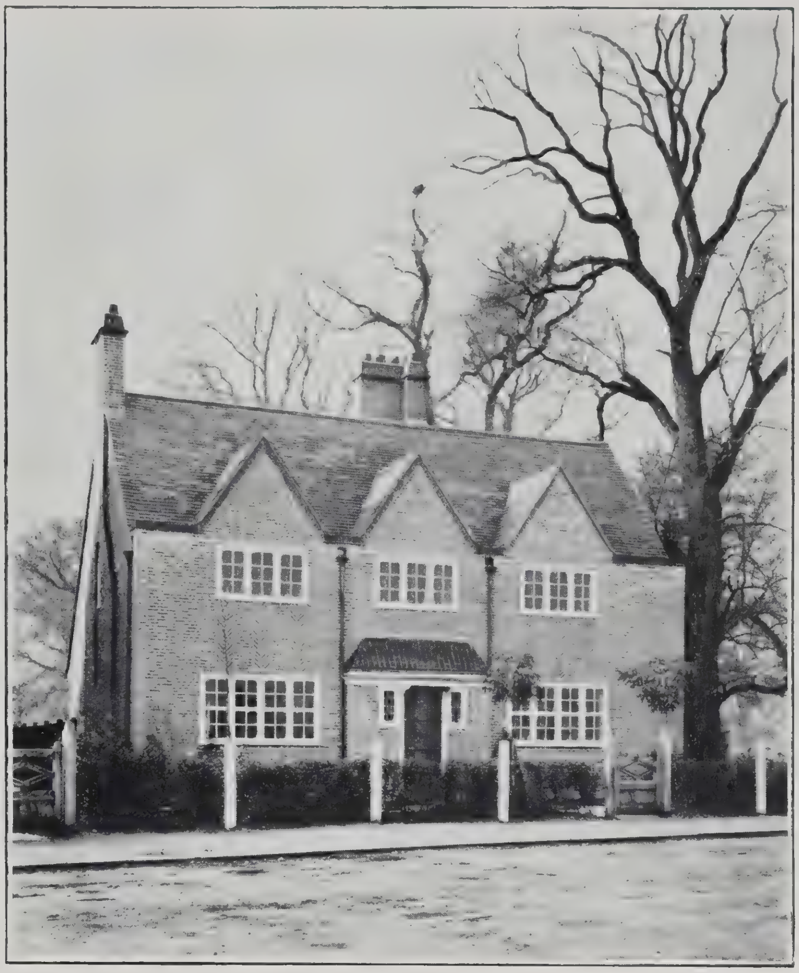
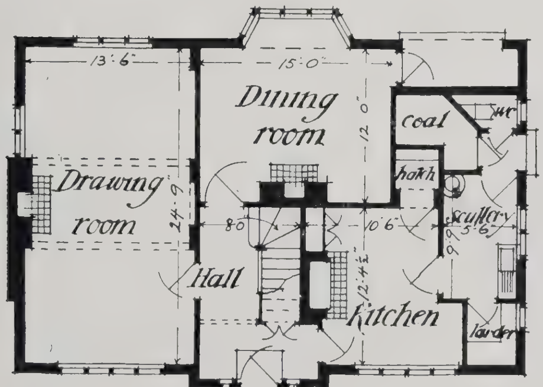
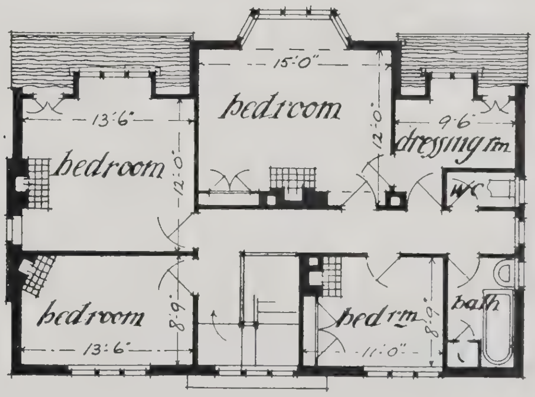


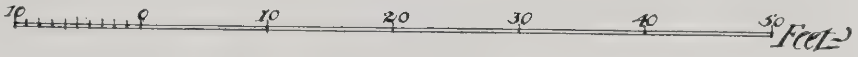
House in Heath Drive Gidea Park



Ground Floor Plan



First Floor Plan



Michael Bunney
Clifford Makins Archts

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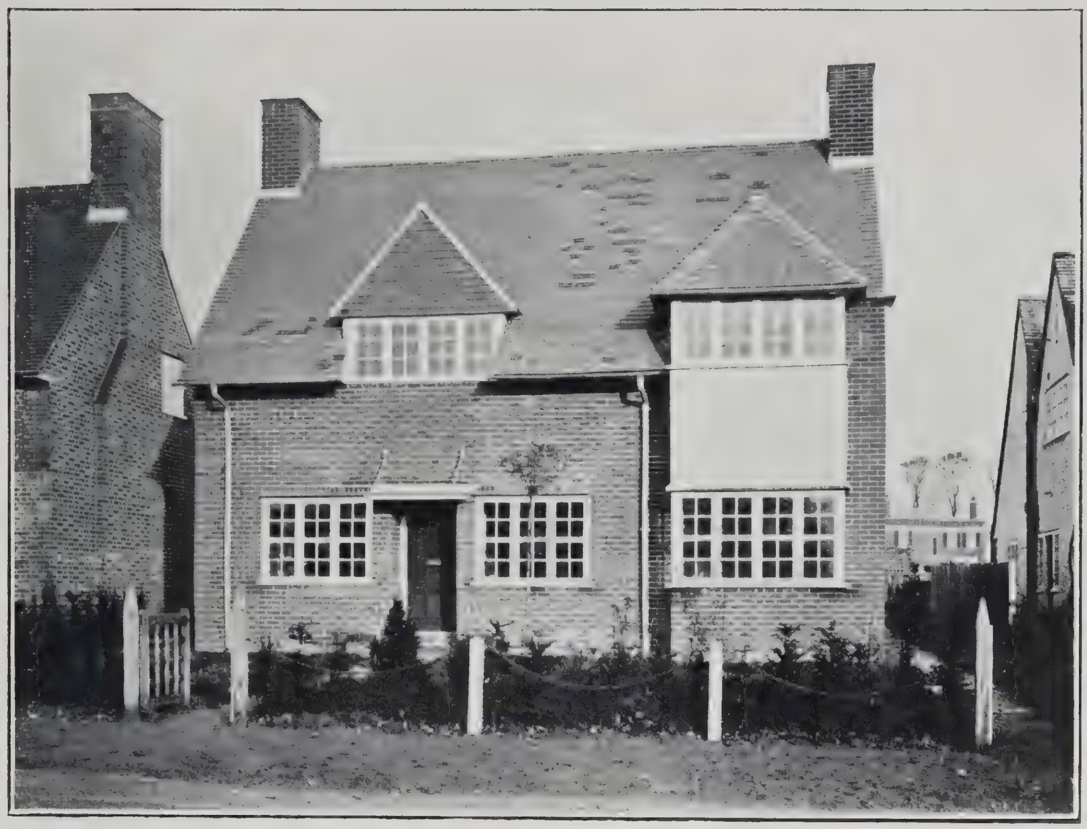
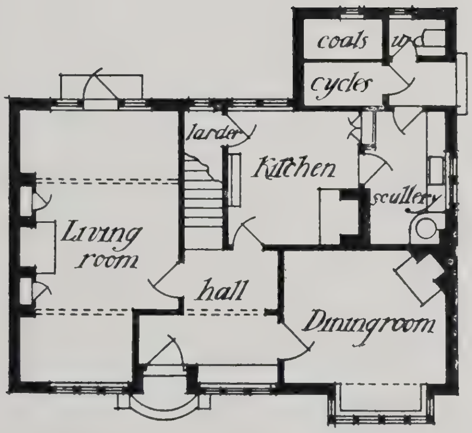
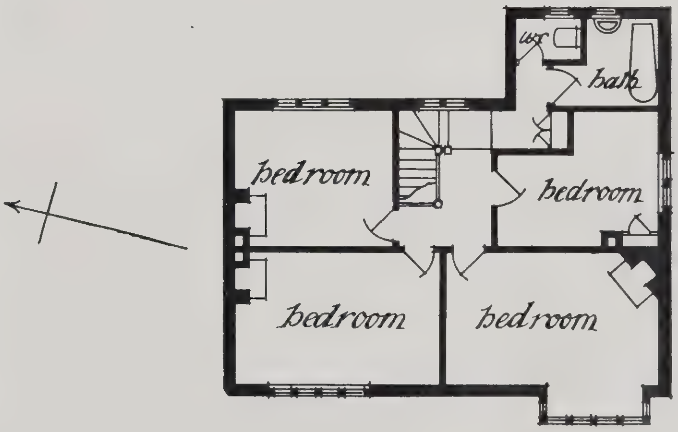


House in Reed Pond Walk
Gidea Park



Ground Floor Plan



First Floor Plan

C. M. Crickmer
Archt.

10 0 10 20 30 feet

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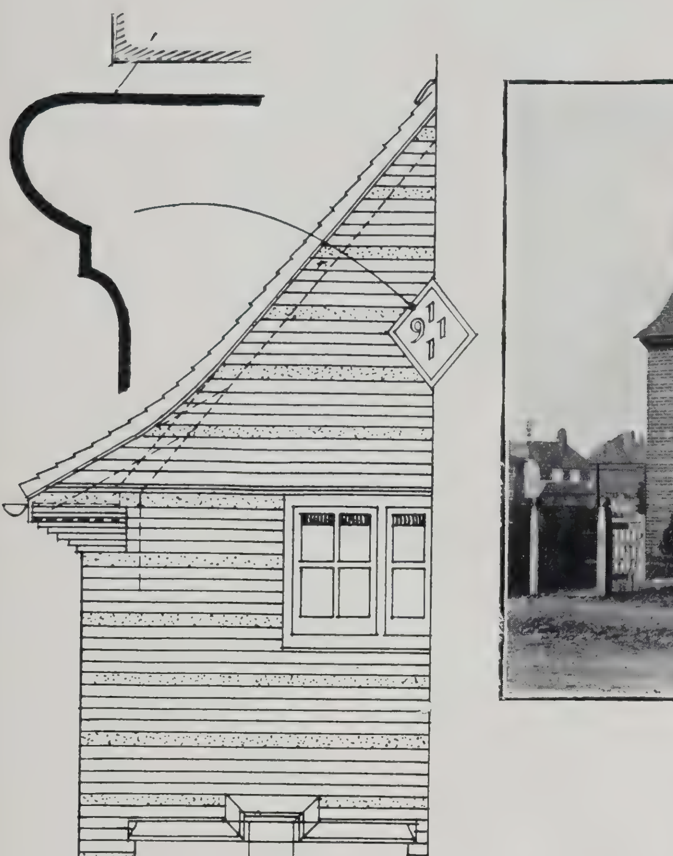

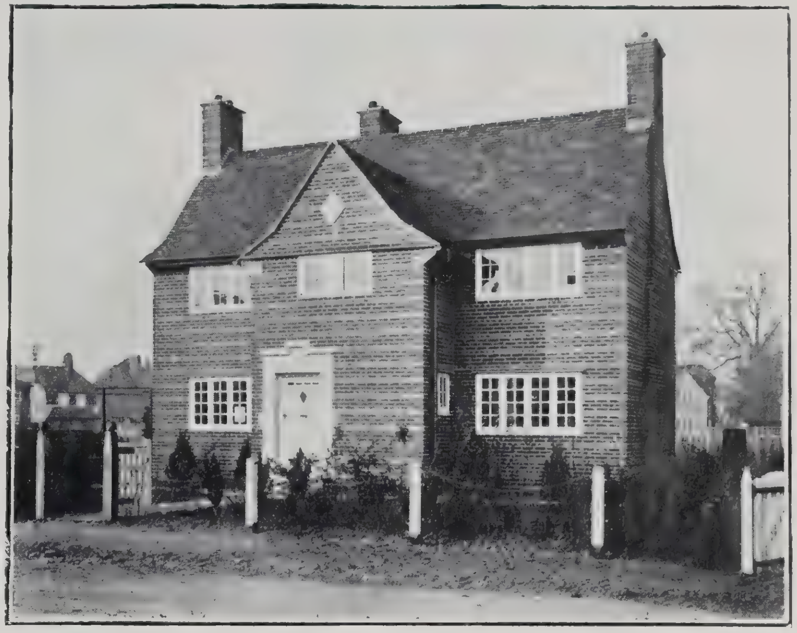

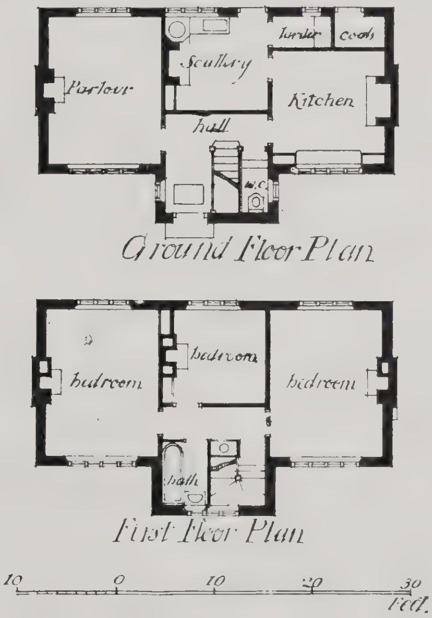

House in Meadway
Gidea Park

Percy Houfton
Archt.

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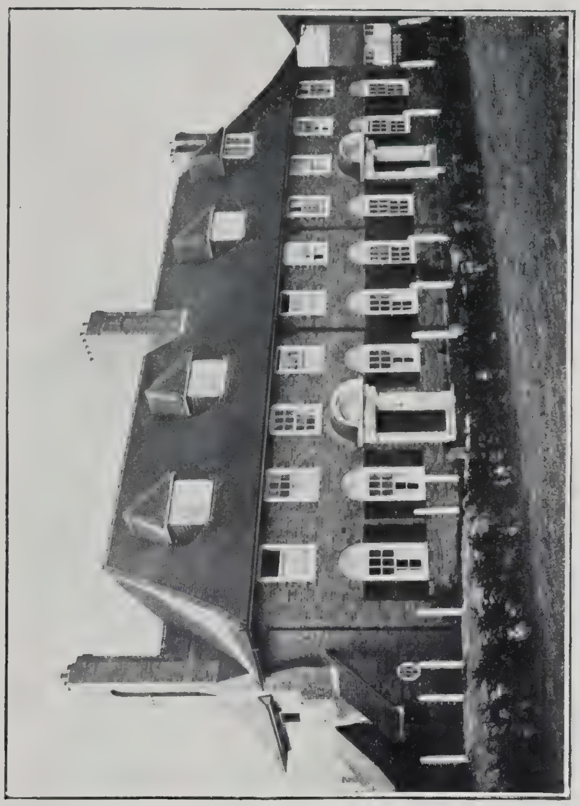
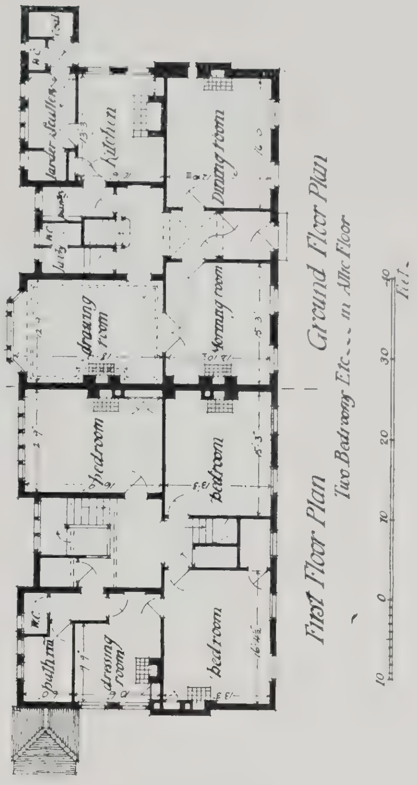
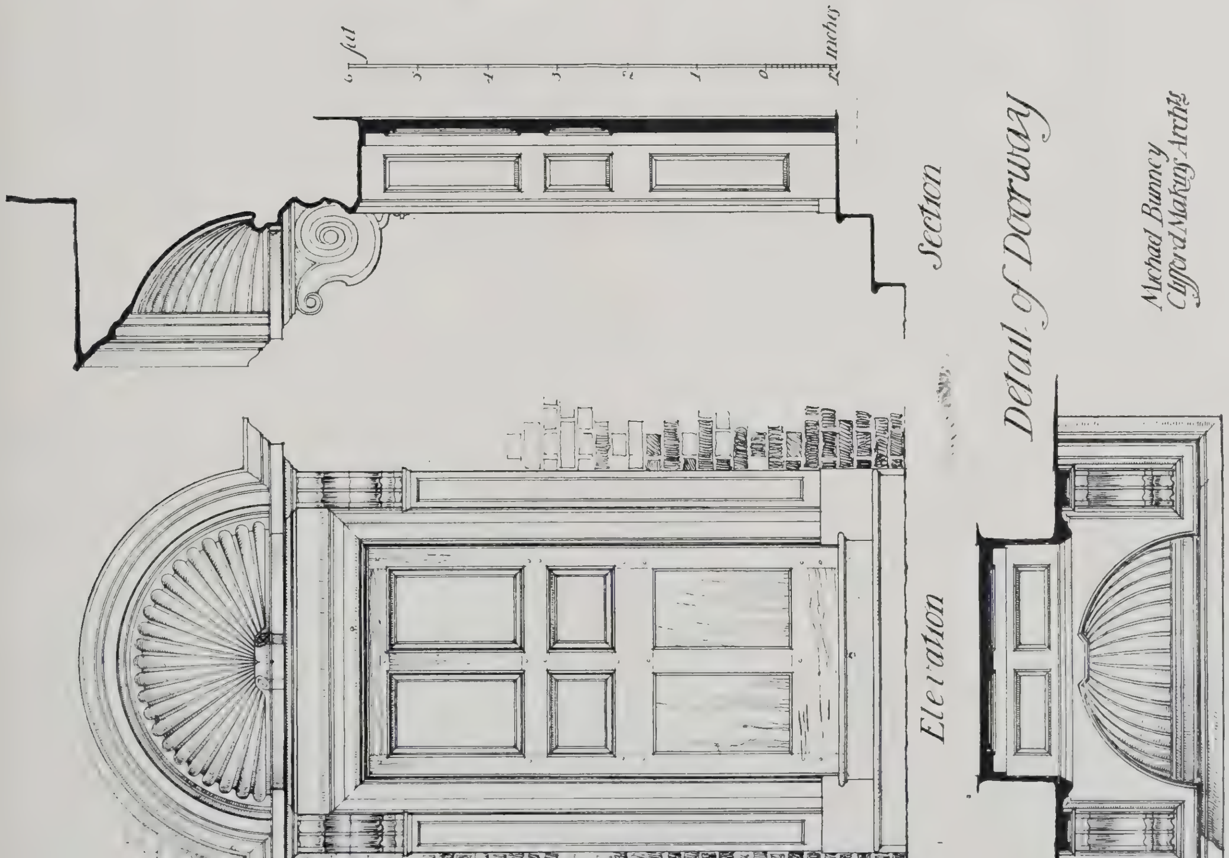


Houses in Linnell Close
Hampstead Garden Suburb



First Floor Plan Ground Floor Plan

Two Bedrooms Etc. in Attic Floor



Detail of Doorway

Michael Bunney
Clifford Makins Archts

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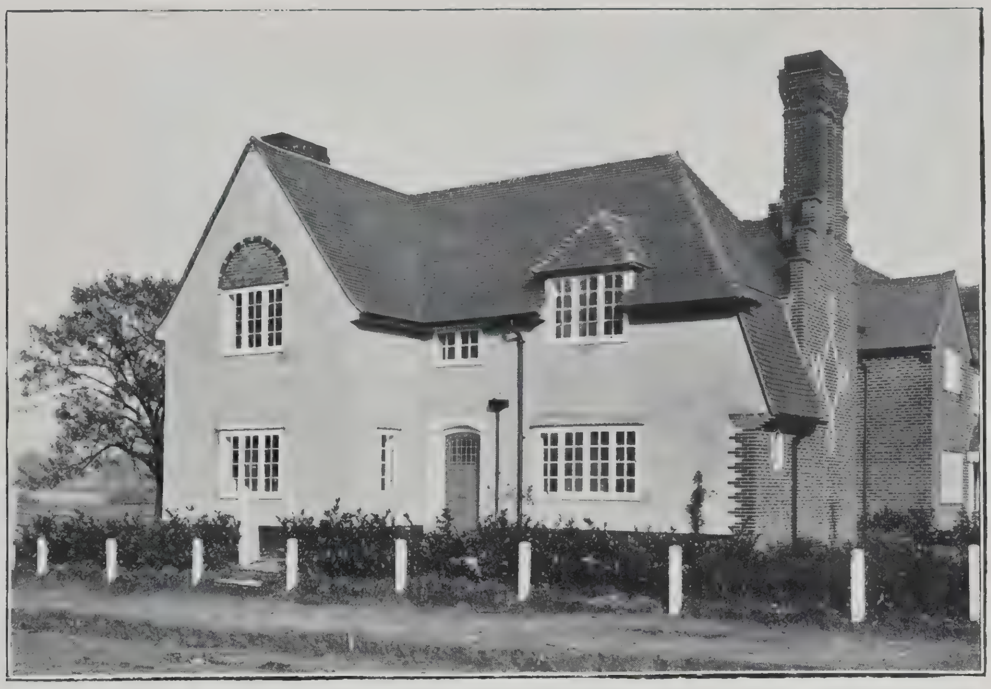
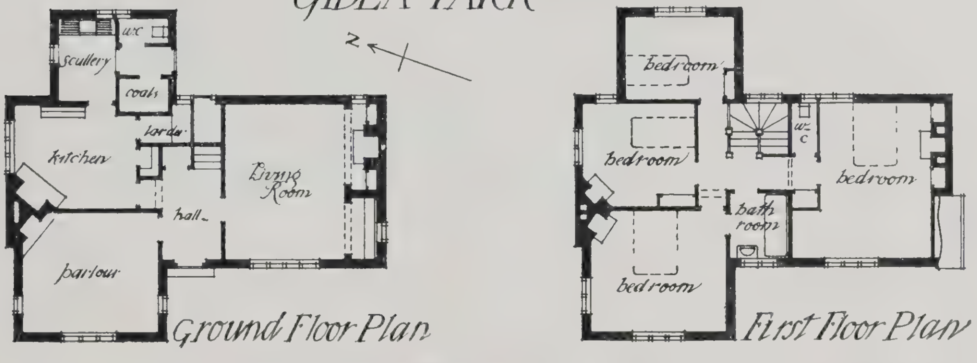


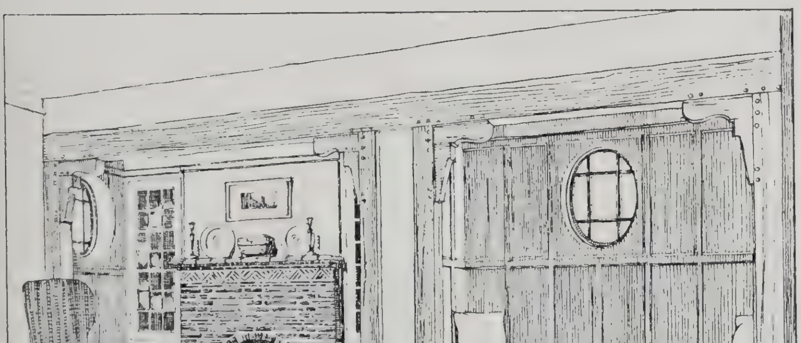
HOUSE IN REED POND WALK GIDEA PARK



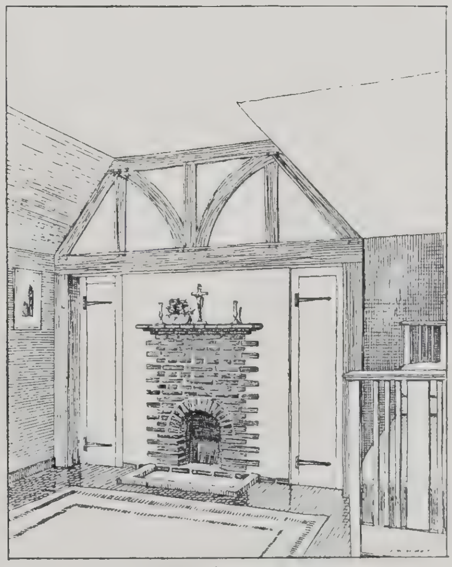
Ground Floor Plan

First Floor Plan

Herbert A Welch
Archt



Interior of Living Room



Bedroom Fire-place

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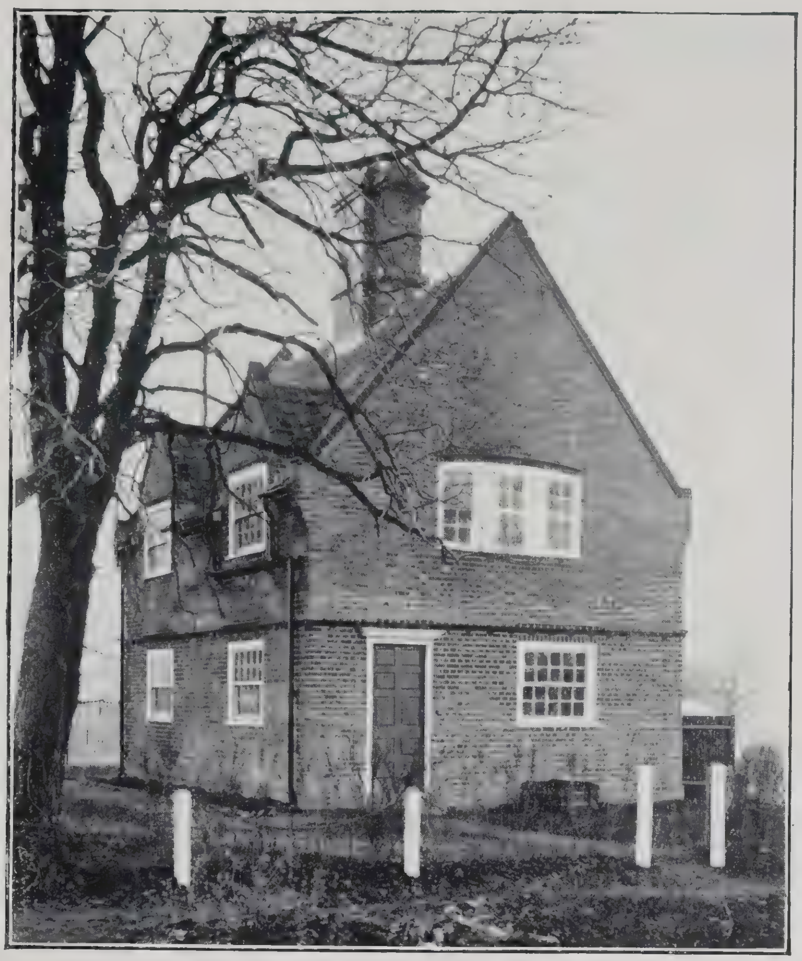
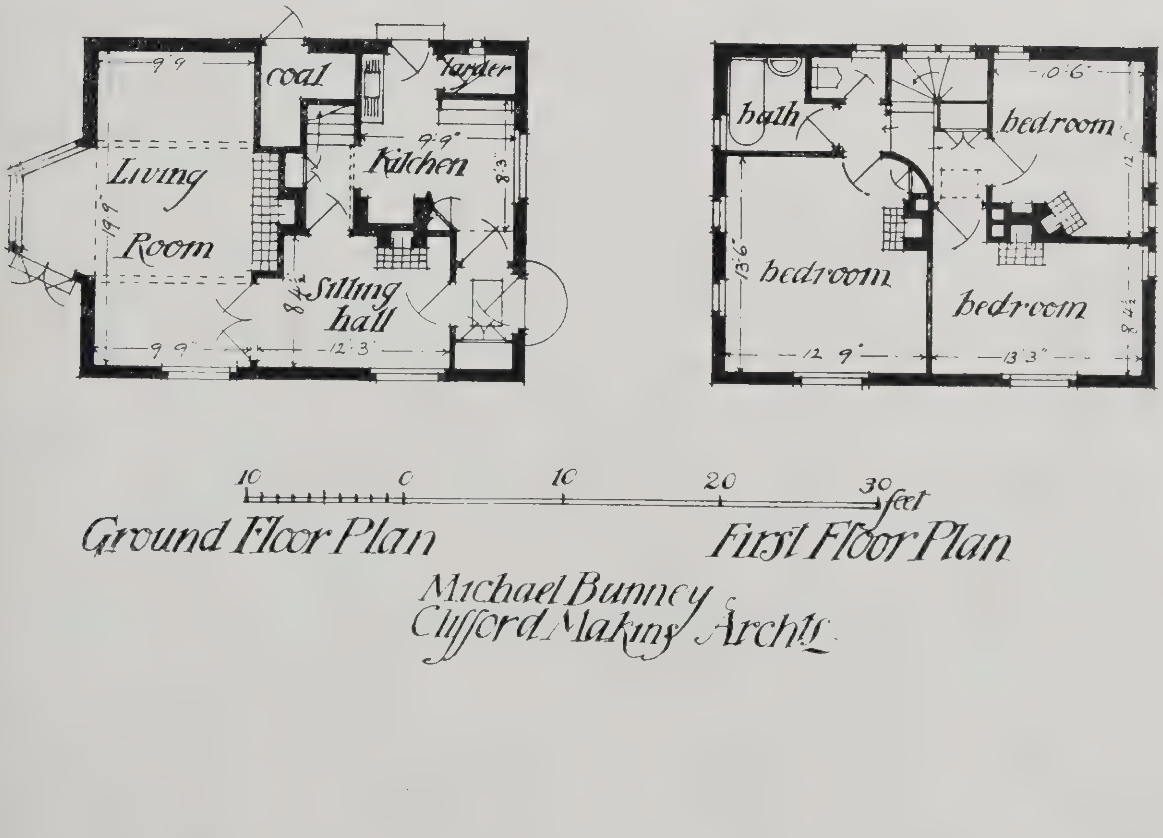


House in Parkway Gidea Park



Ground Floor Plan First Floor Plan

Michael Bunney &
Clifford Makins Archts.

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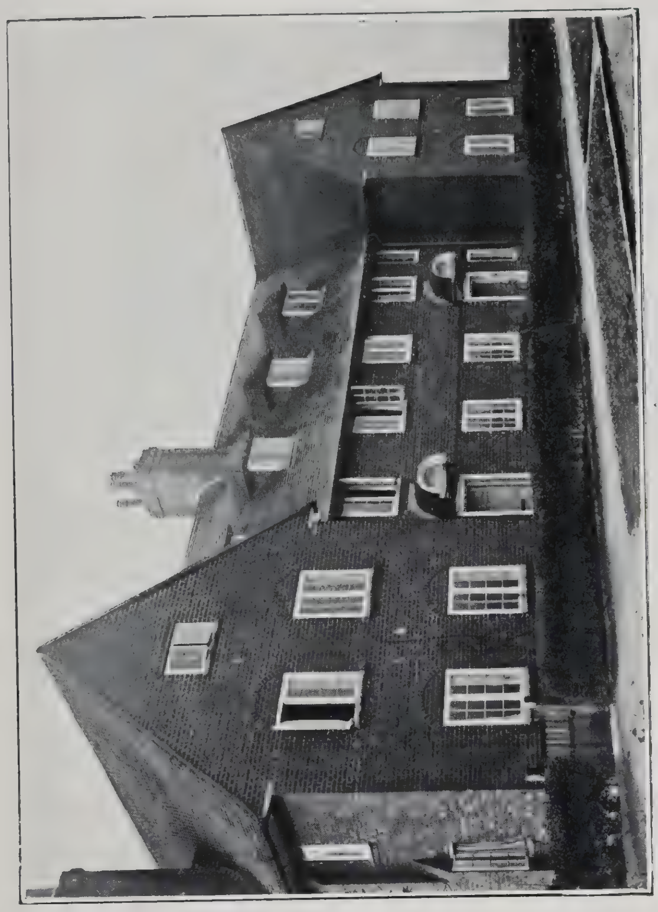
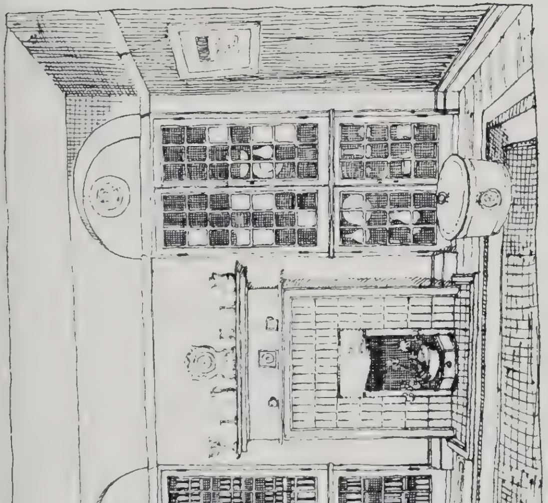
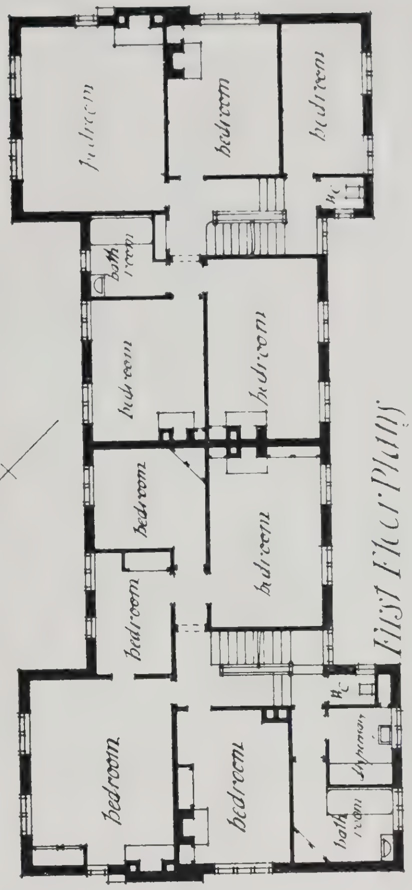


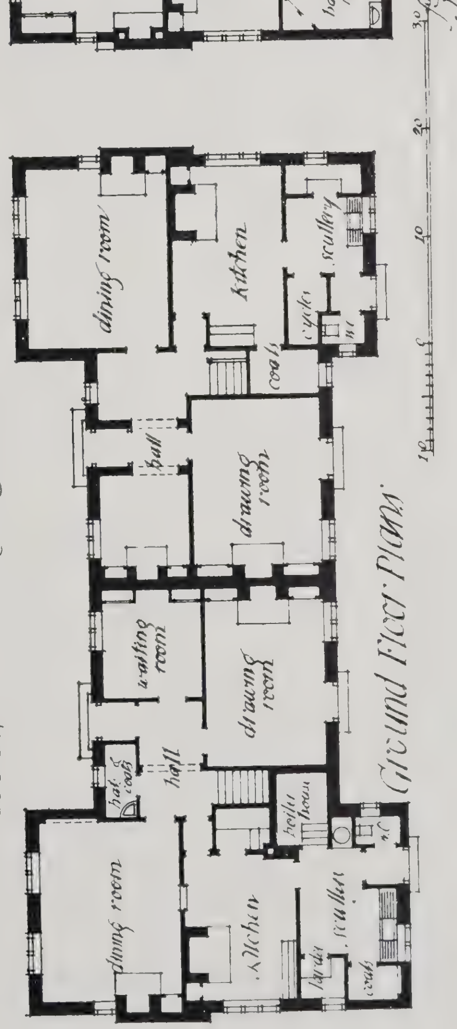


View of Drawing Room

HOUSES IN HEATH GATE HAMPSTEAD GARDEN SUBURB



First Floor Plans



Ground Floor Plans

Herbert A Welch Archt

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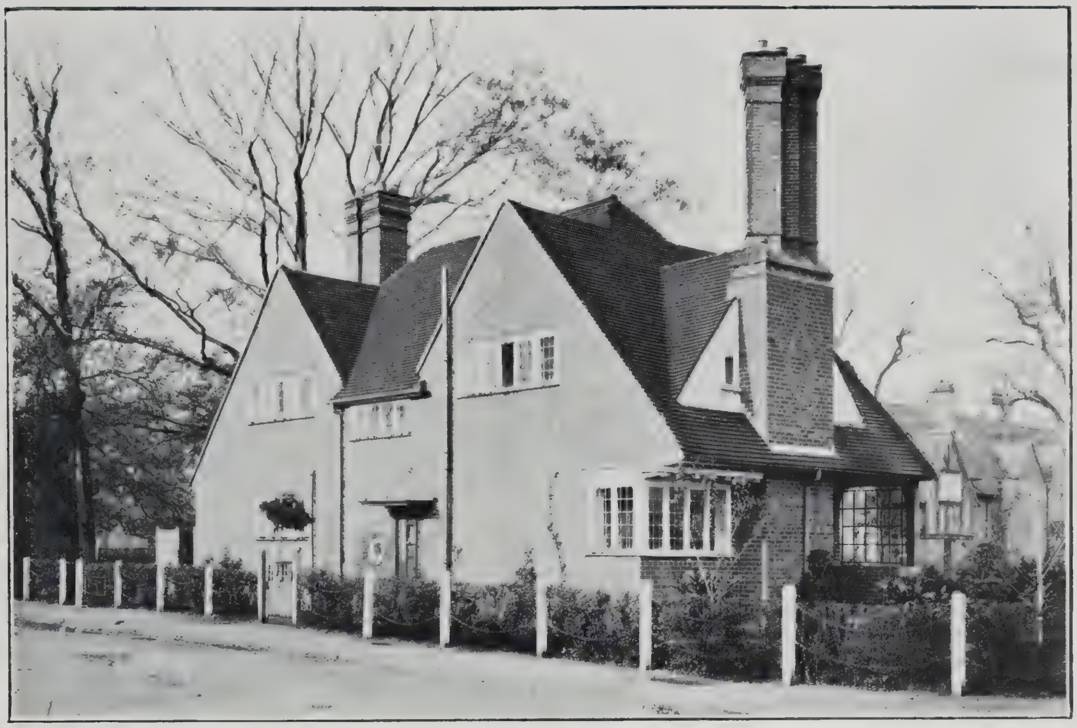
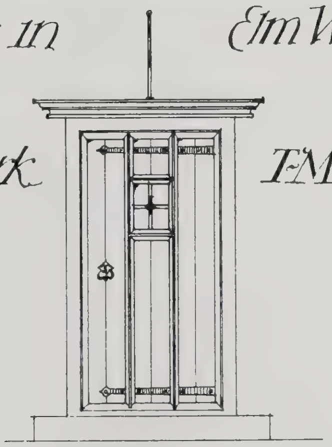
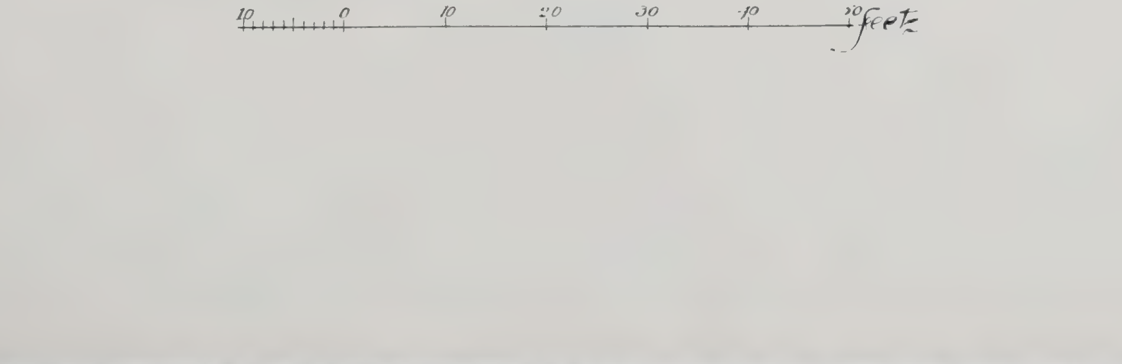


House in Elm Walk

Gidea Park T.M. Wilson Archt.



Detail of Front-door



Ground Floor Plan

First Floor Plan

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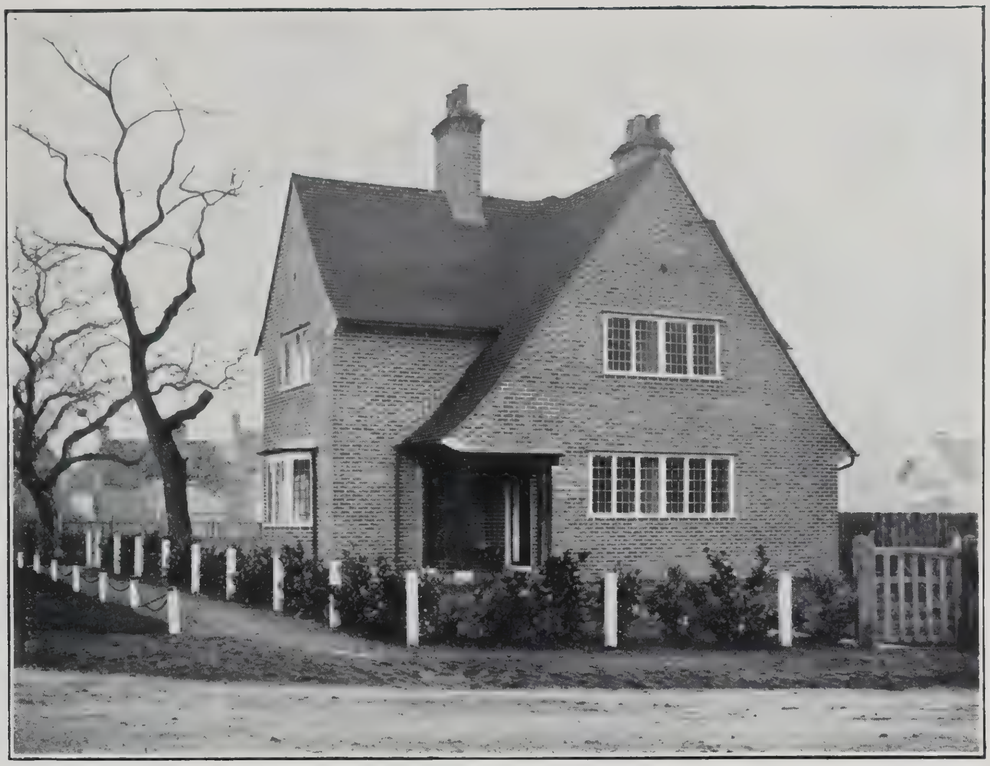
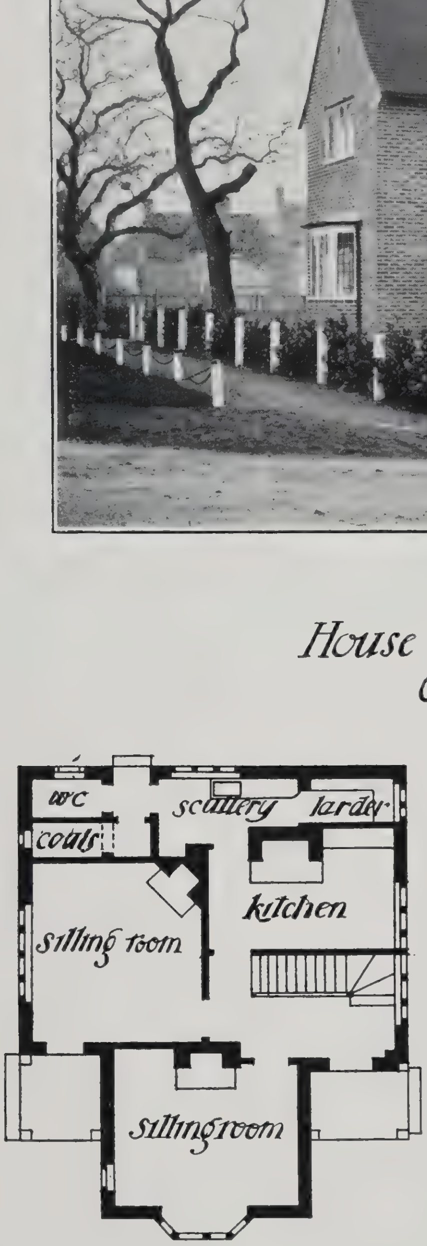
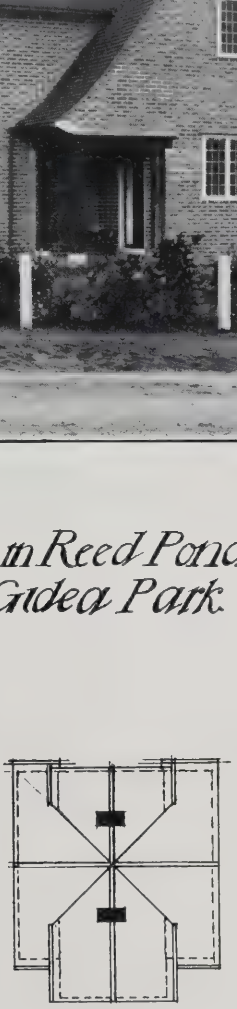


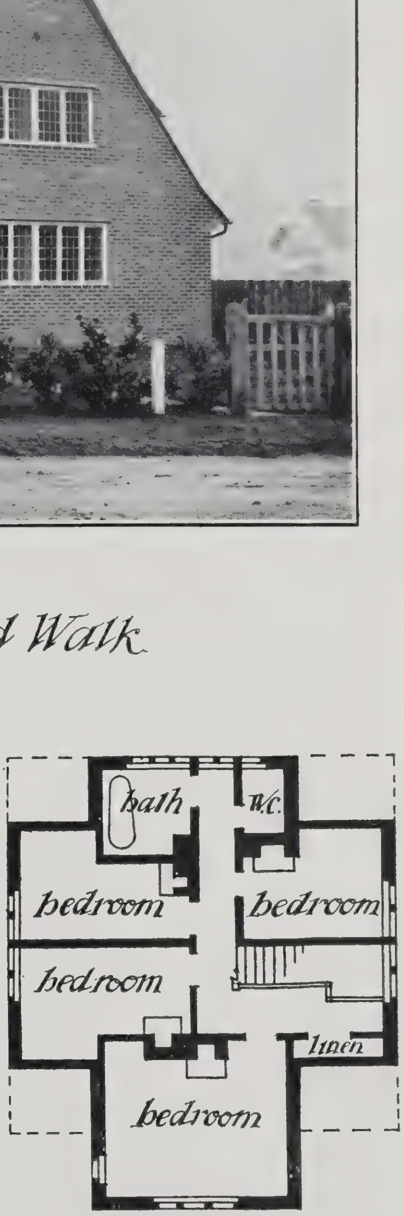
House in Reed Pond Walk
Gidea Park



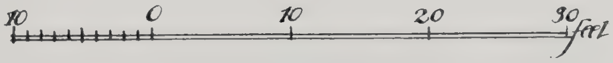
Ground Floor Plan



Roof Plan



First Floor Plan



E. J. May
Archt.

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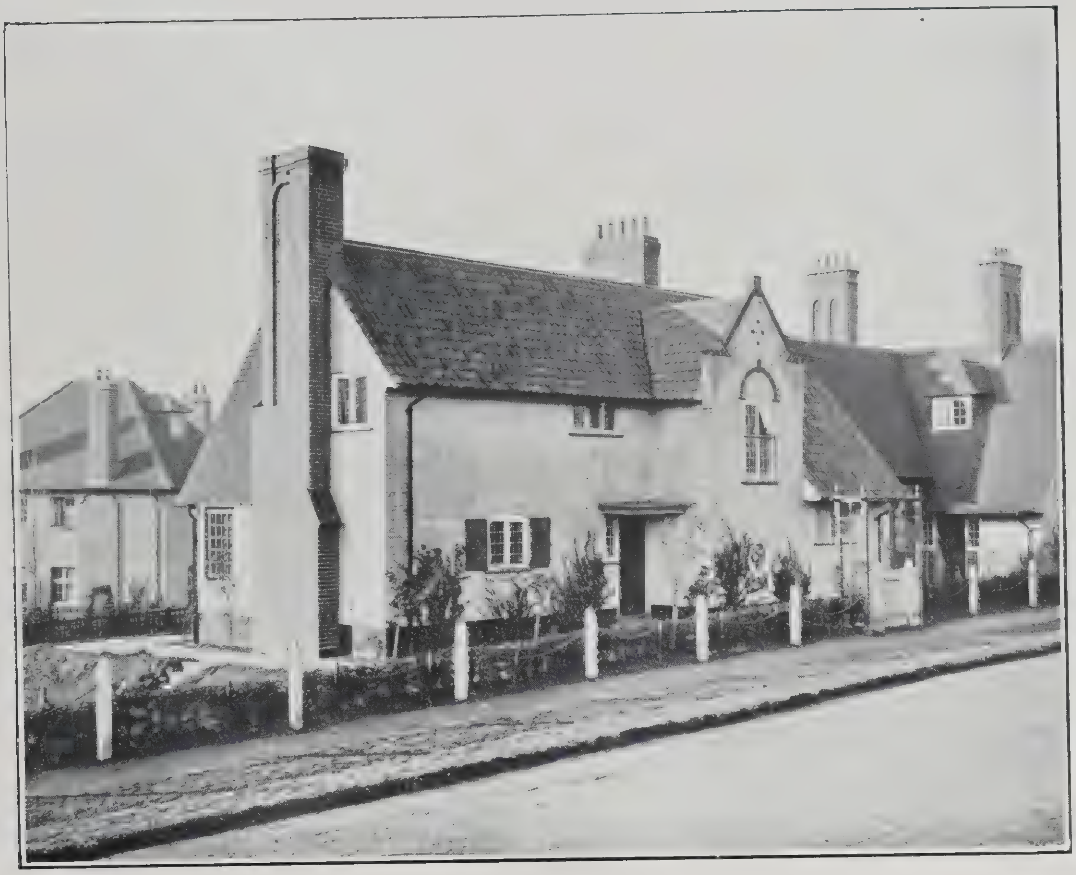
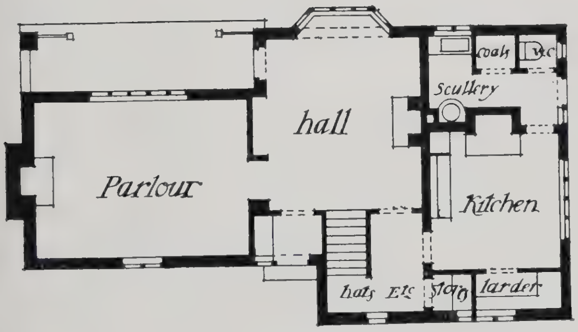
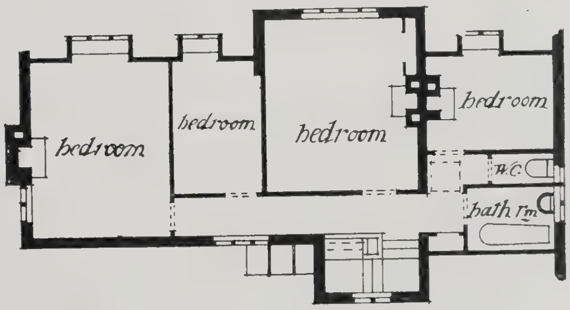


House in Willifield Way Hampstead Garden Suburb.



Ground Floor Plan



First Floor Plan

T.M.Wilson Arch^t

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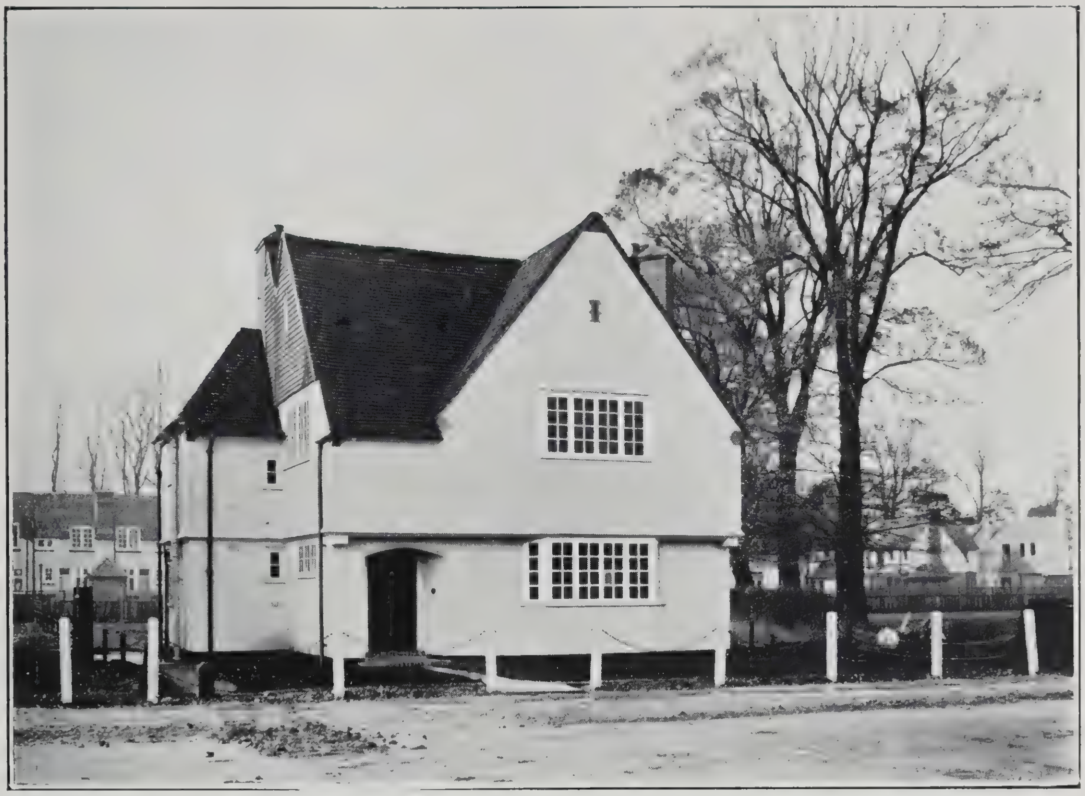
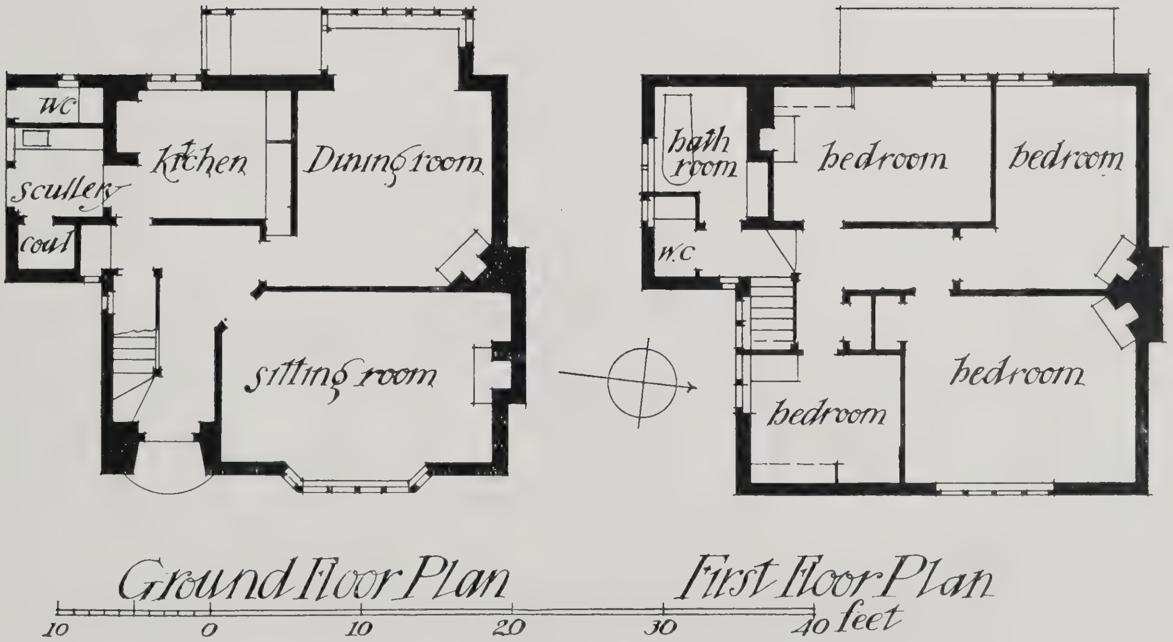
UNIVERSITY OF [illegible]



House in Heath Drive Gidea Park



Ground Floor Plan   First Floor Plan

Ernest Willmott Archt.

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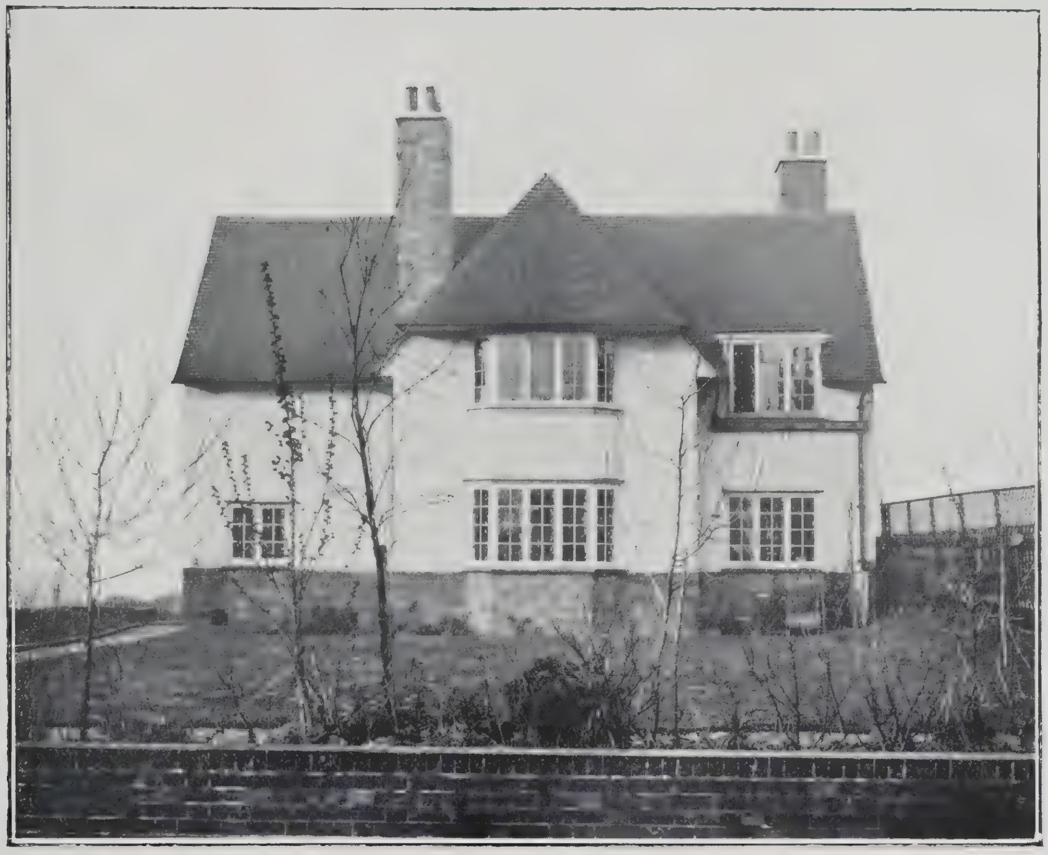
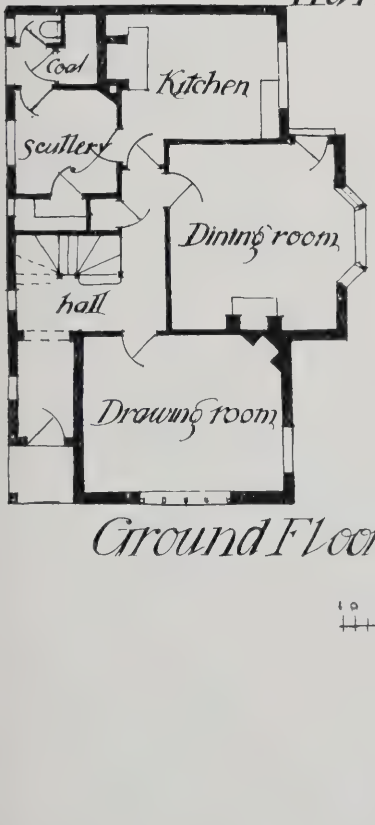
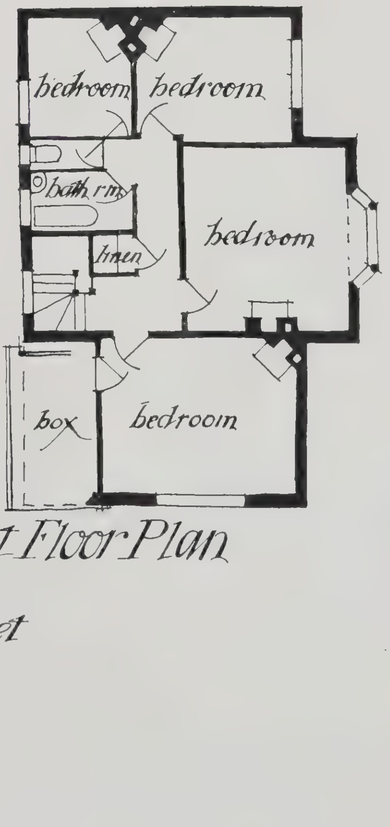


House in Hampstead Way
Hampstead Garden
Suburb

E. Guy Dawber
Archt.



Ground Floor Plan



First Floor Plan

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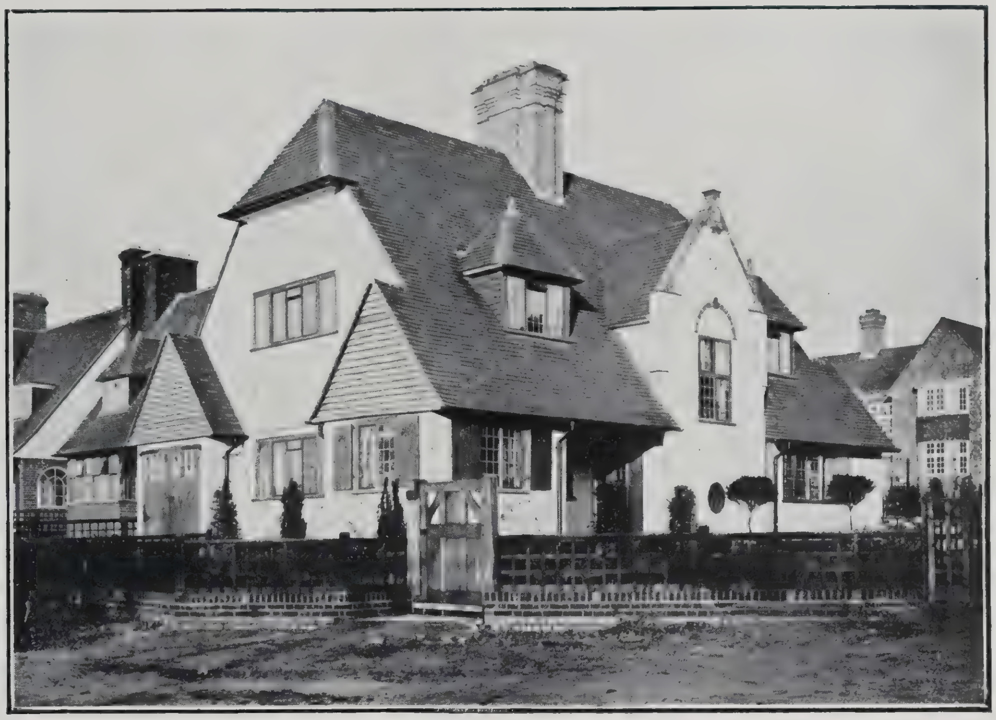
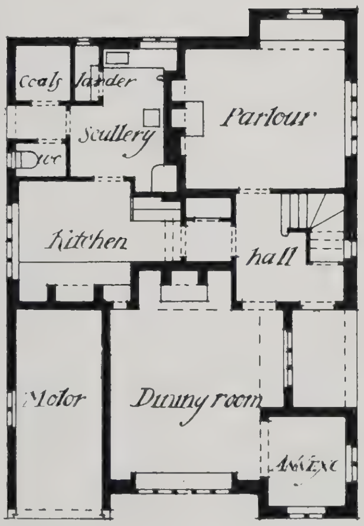
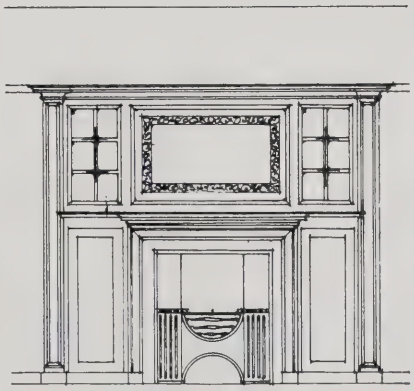


House in Wild Hatch Hampstead Garden Suburb

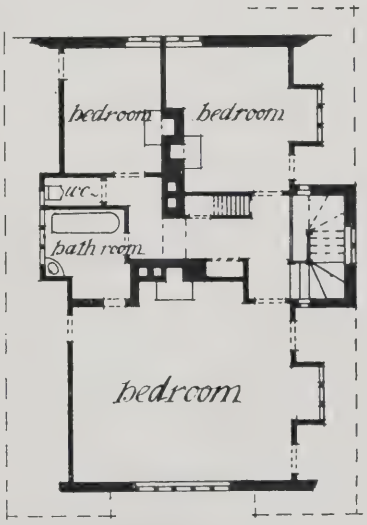
T. M. Wilson Archt.



Ground Floor Plan



Parlour Chimney-piece



First Floor Plan

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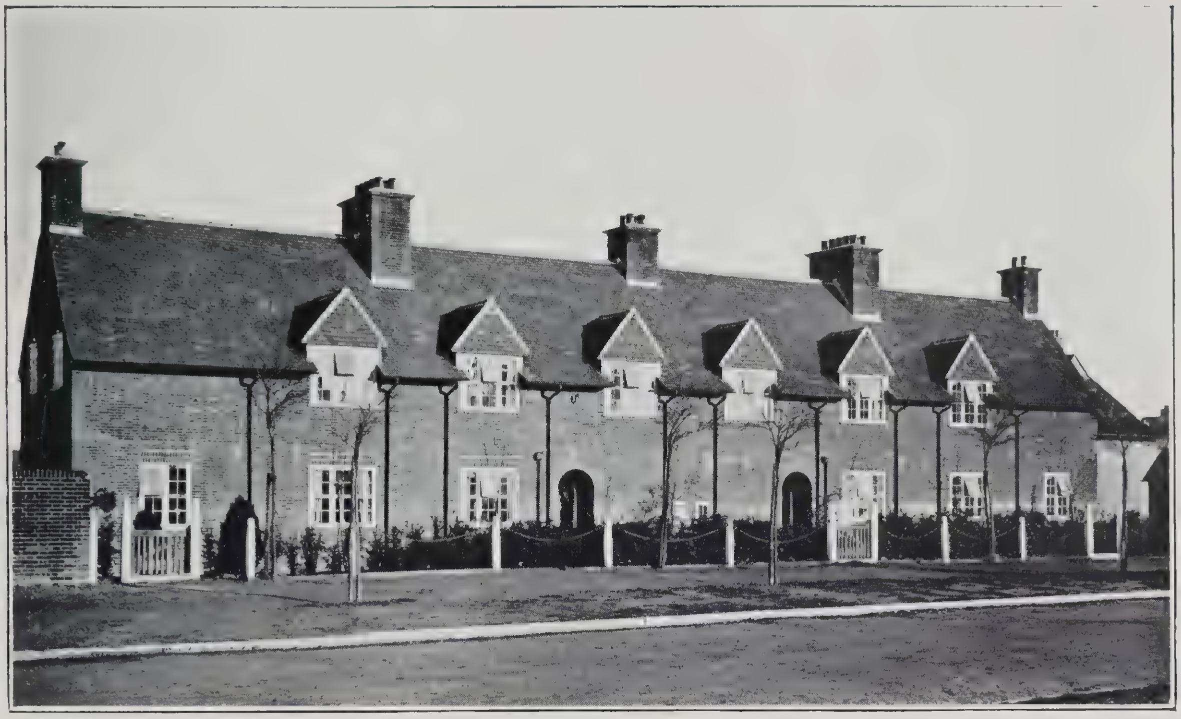
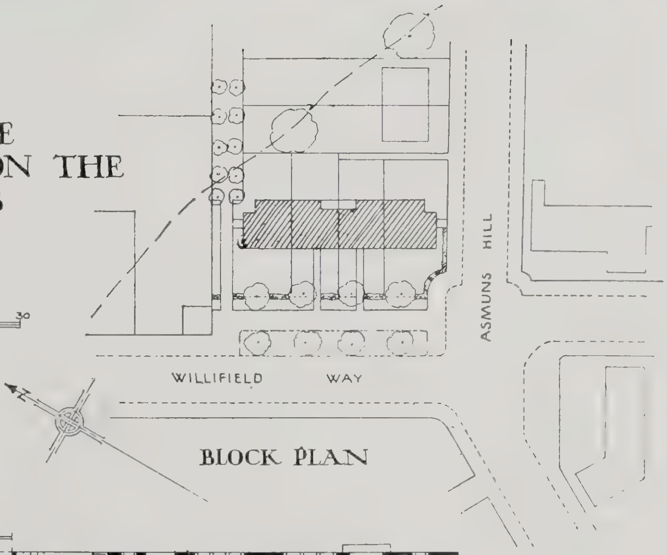


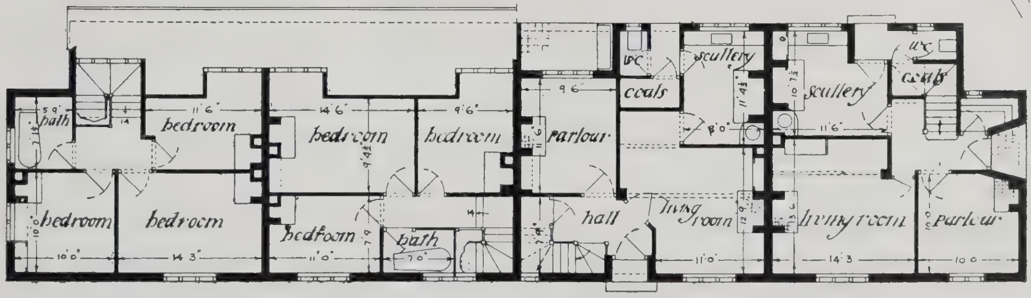
GROUP·OF·COTTAGES FOR THE HAMPSTEAD TENANTS L^TD·ON THE HAMPSTEAD·GARDEN SUBURB

SCALE·OF·FEET 10 5 0 10 20 30

Barry Parker & Raymond Unwin Archts



BLOCK PLAN



FIRST·FLOOR·PLAN

GROUND·FLOOR·PLAN

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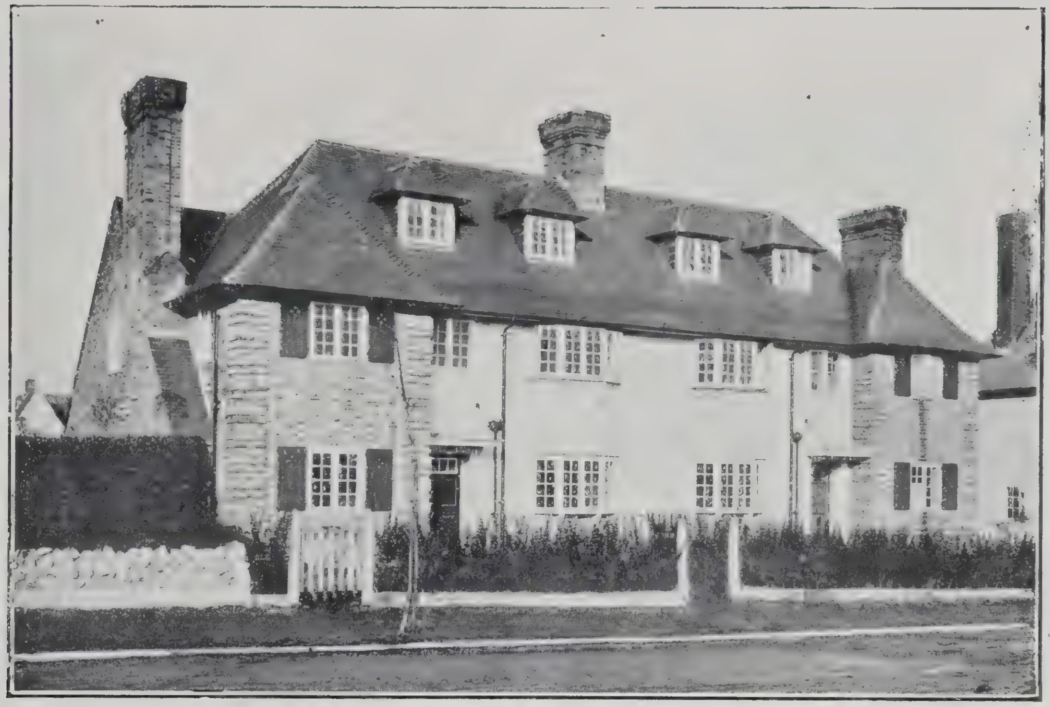
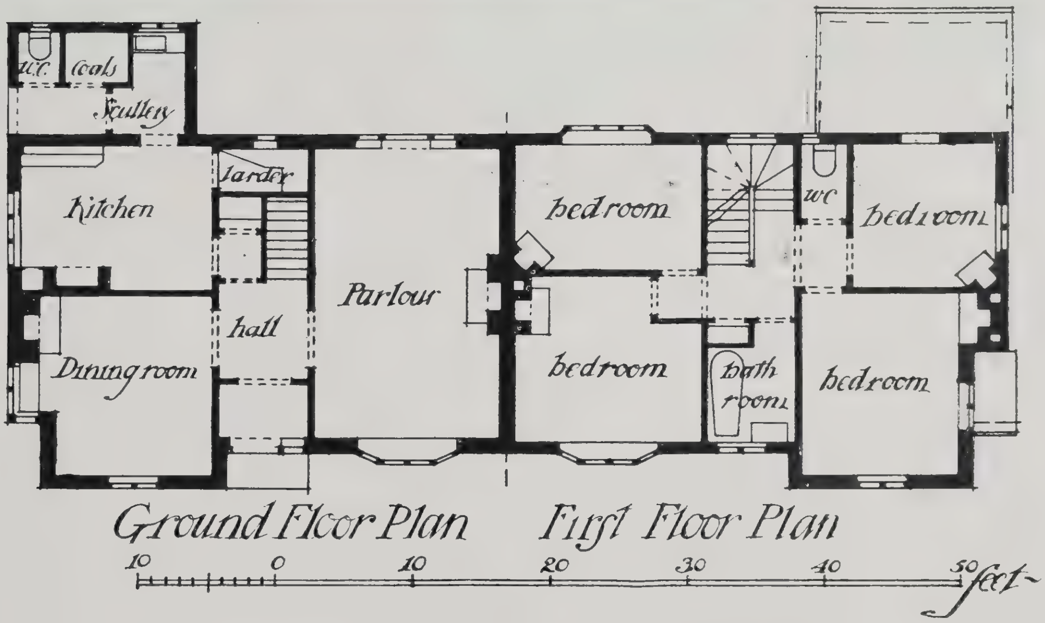
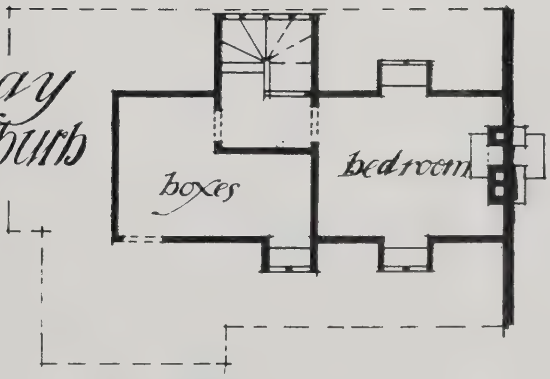




HOUSES in Meadway
Hampstead Garden Suburb

T-M-Wilson Archt



Attic Plan

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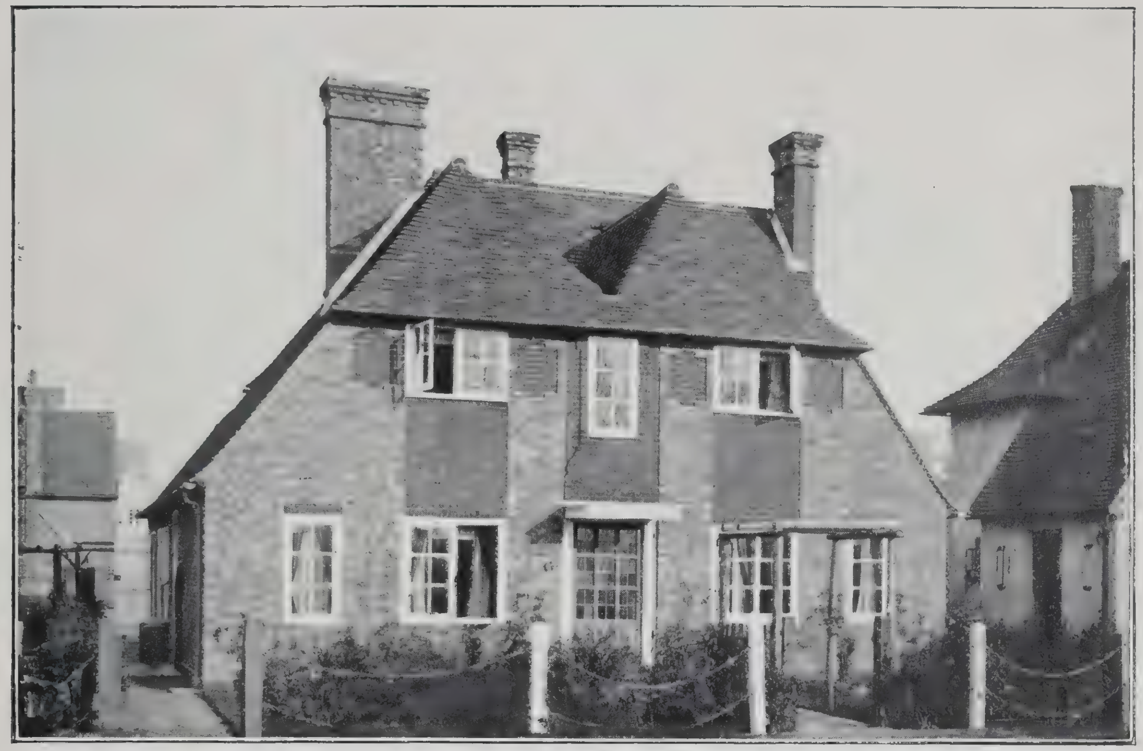
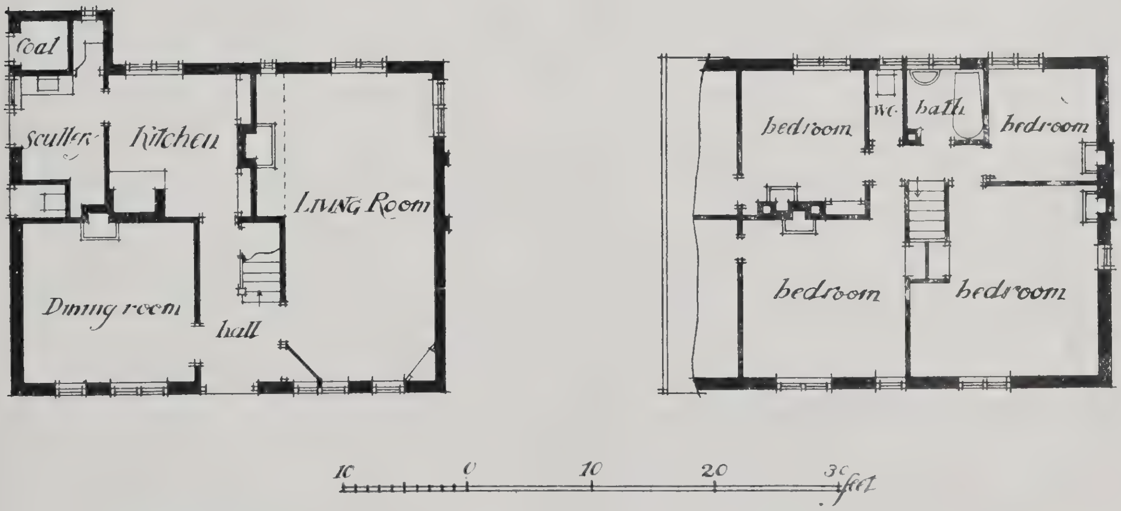


House in Parkway Gidea Park.



Ground Floor Plan

First Floor Plan

Fair & Myer Archts.

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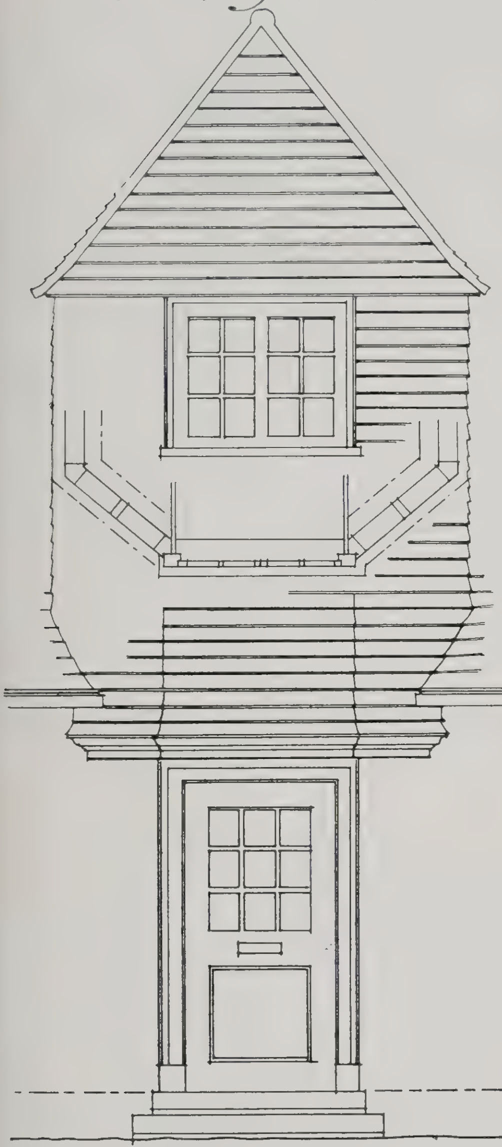
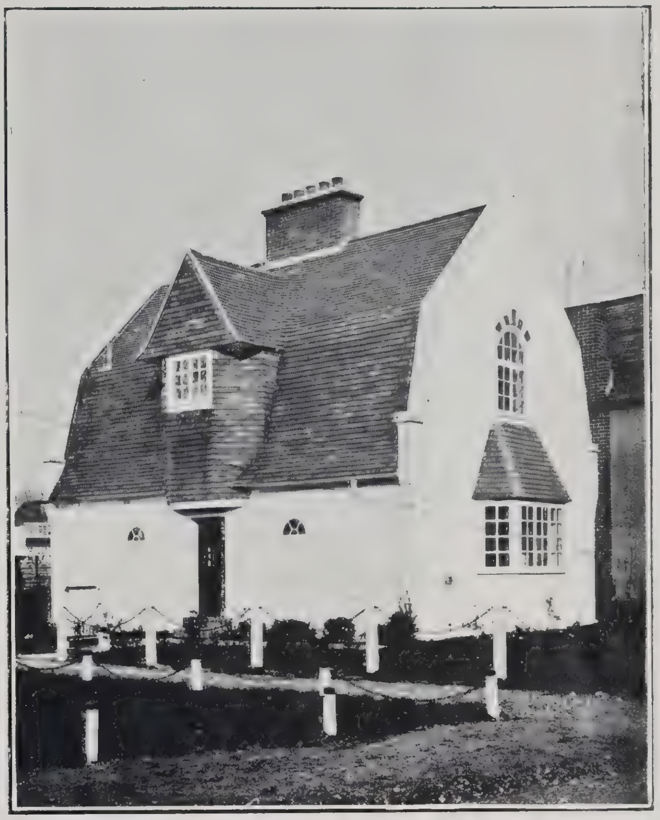
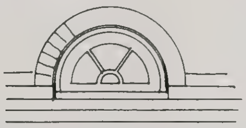
Cottage in Meadway Gidea Park

Detail of Entrance

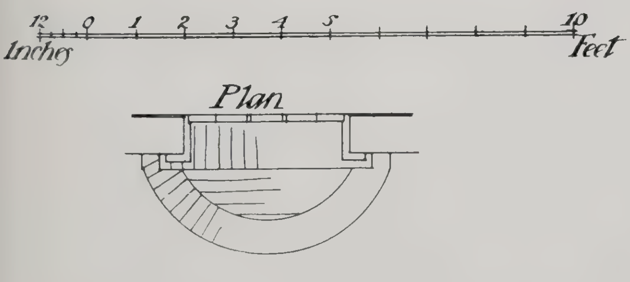


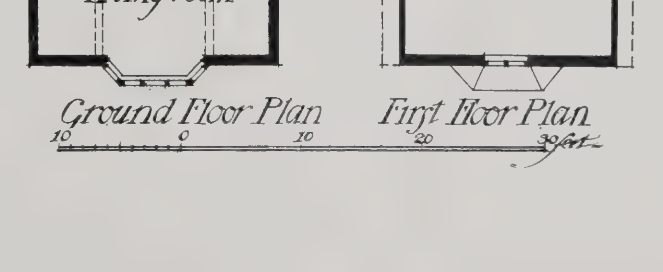
Elevation





Ernest Willmott
Archt





Ground Floor Plan First Floor Plan

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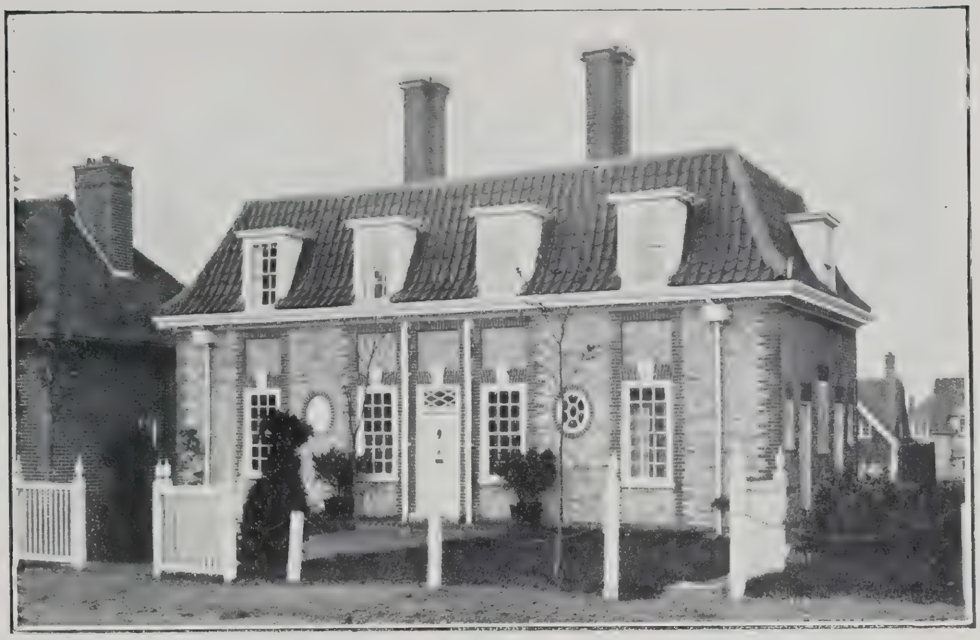
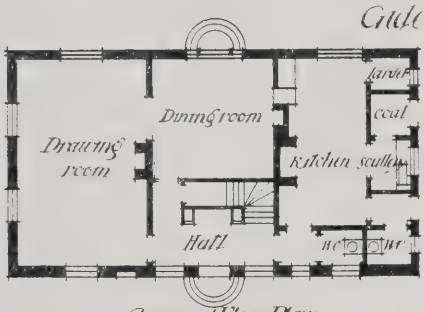
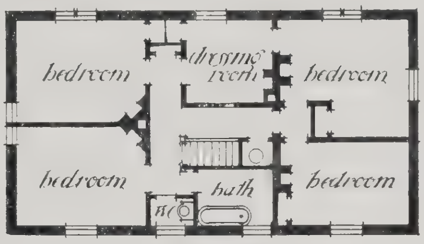


House in Reed Pond Walk
Gidea Park



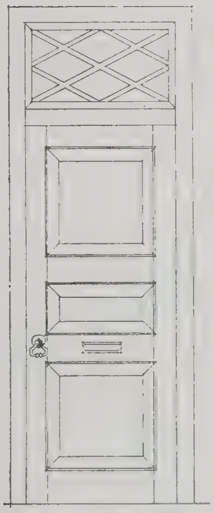
Ground Floor Plan

ft 0 10 20 30 feet

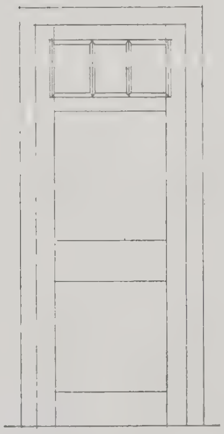


First Floor Plan

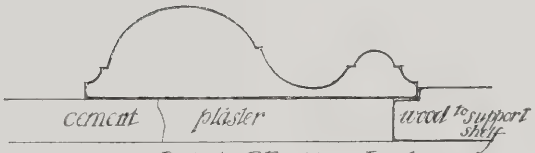
Clough Williams-Ellis
Archt.



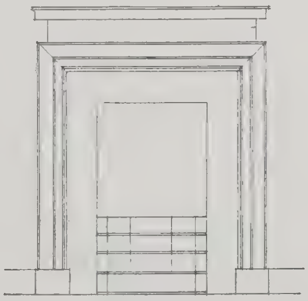
Detail of Front Door



Detail of Kitchen door

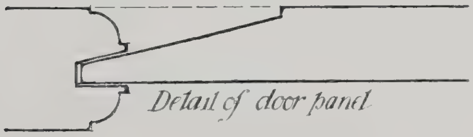


Detail of Fireplace Jambs

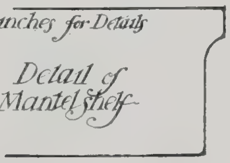


Detail of Drawing rm. Chimney-piece

ins. 12 0 1 2 3 4 5 6 7 8
Feet ~ inches for Details



Detail of door panel



Detail of
Mantel shelf

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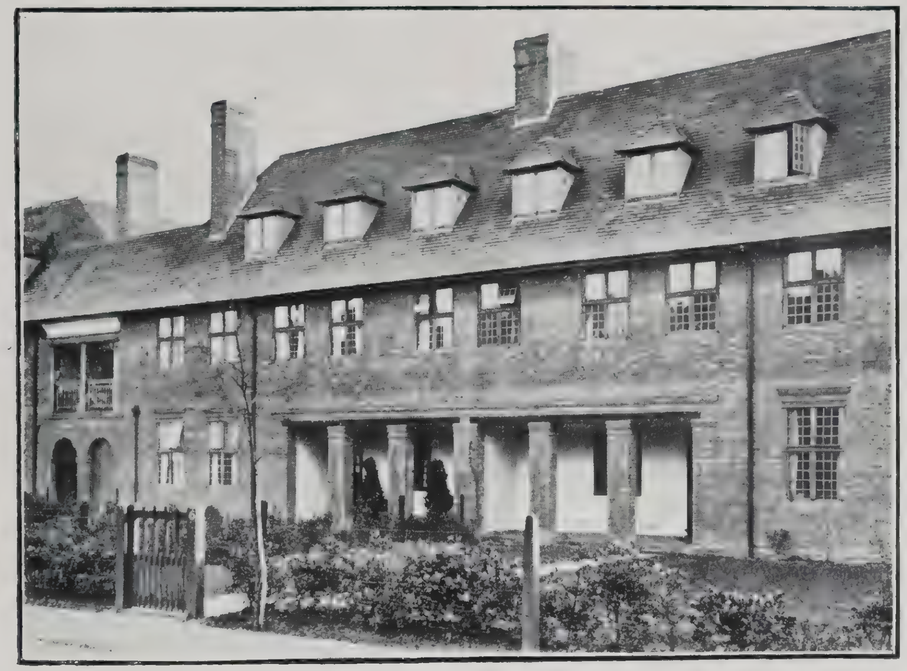
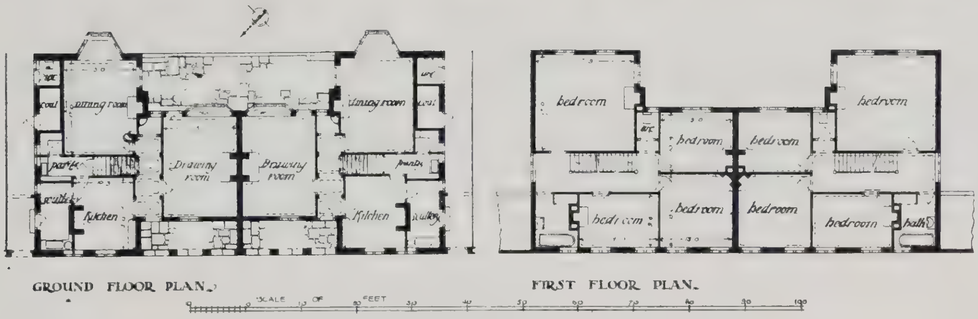
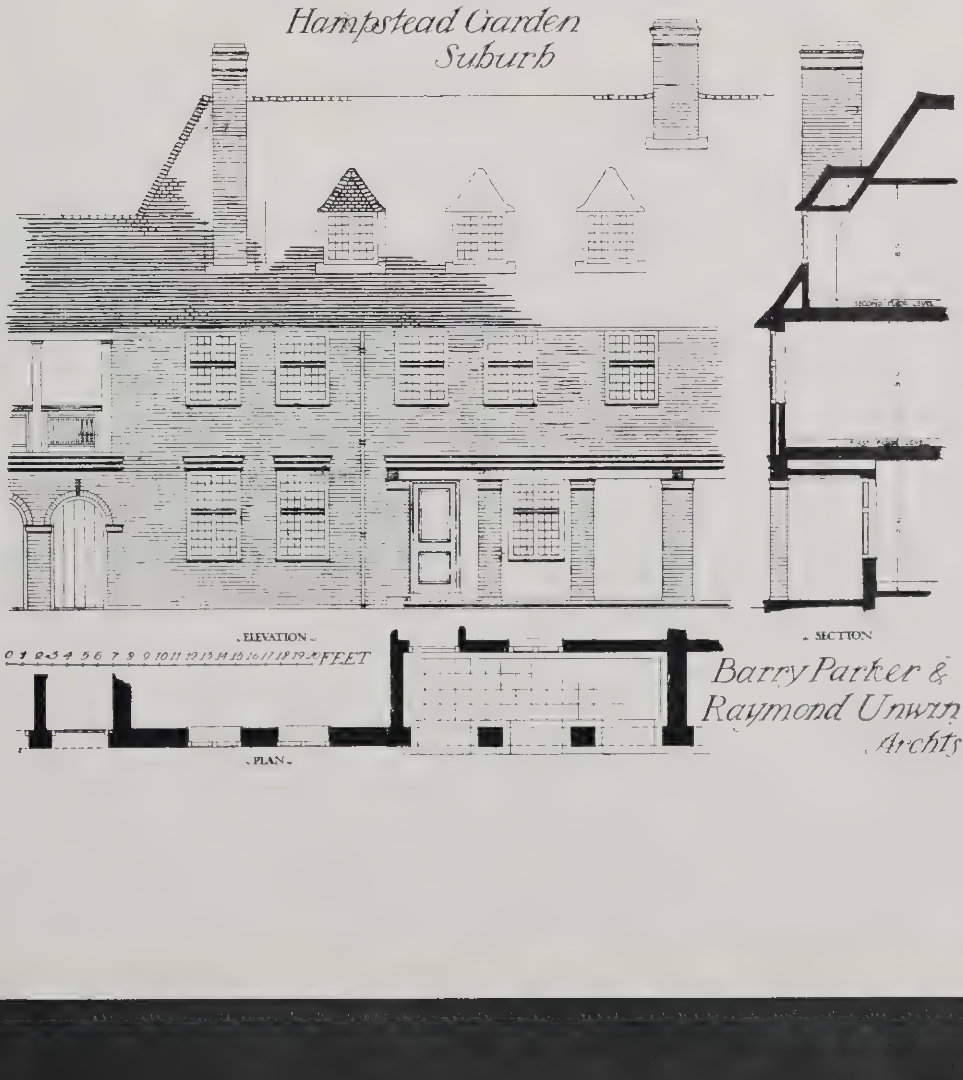




Pair of Houses in Heath Close
Hampstead Garden
Suburb



Barry Parker &
Raymond Unwin
Archts

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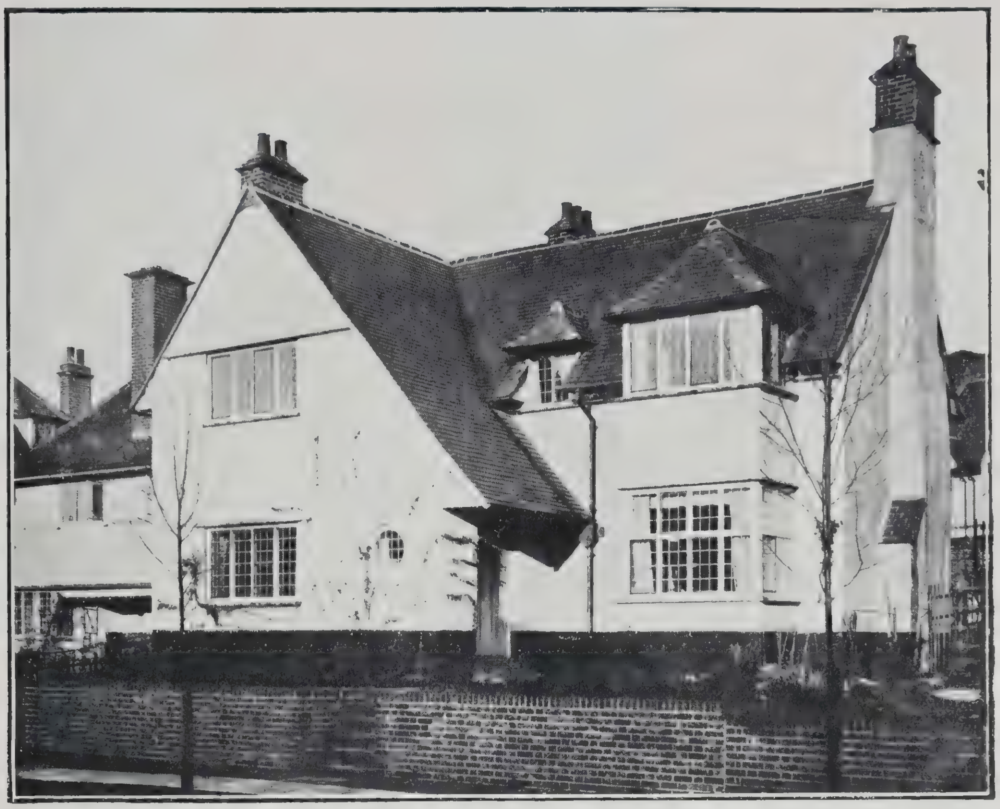
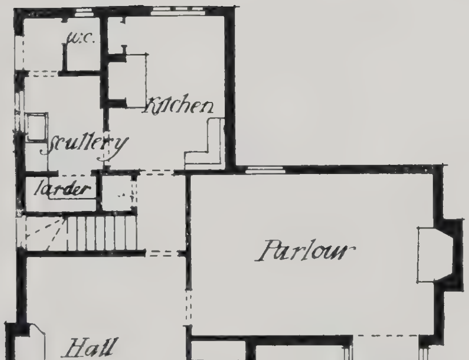
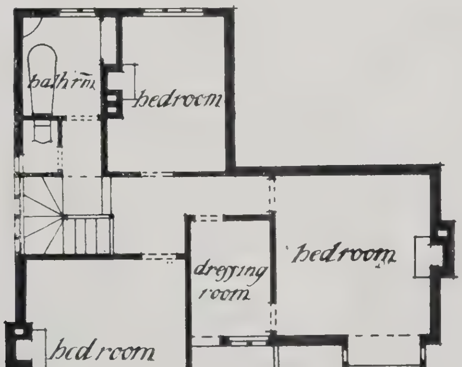


House in Hampstead Way
Hampstead Garden Suburb



Ground Floor Plan



First Floor Plan

T·M·Wilson Archt

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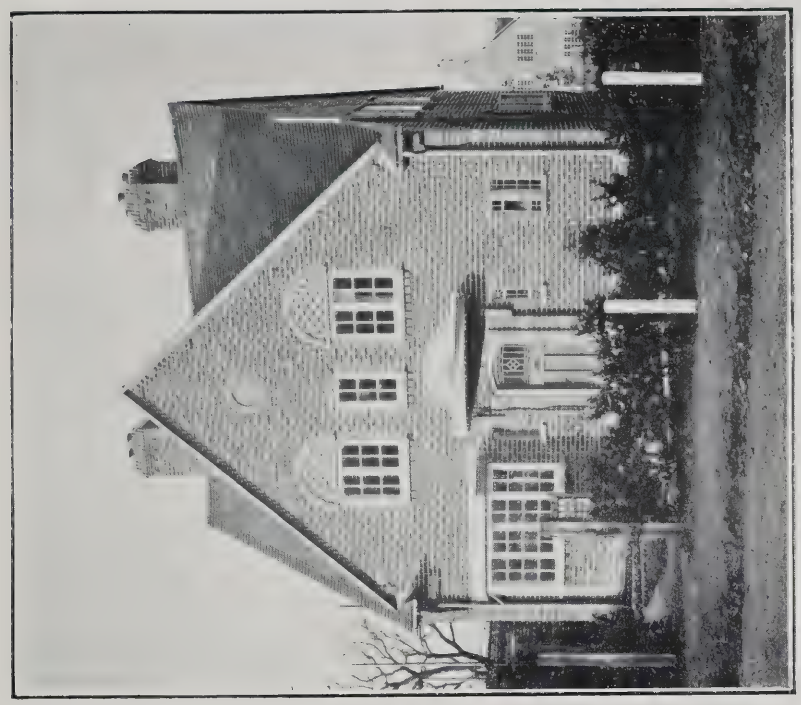
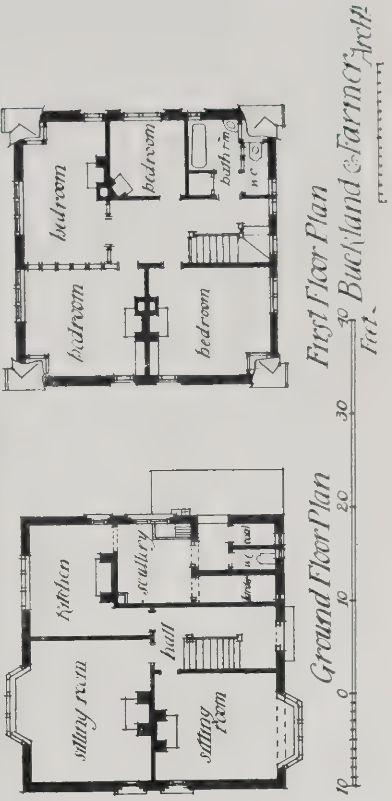
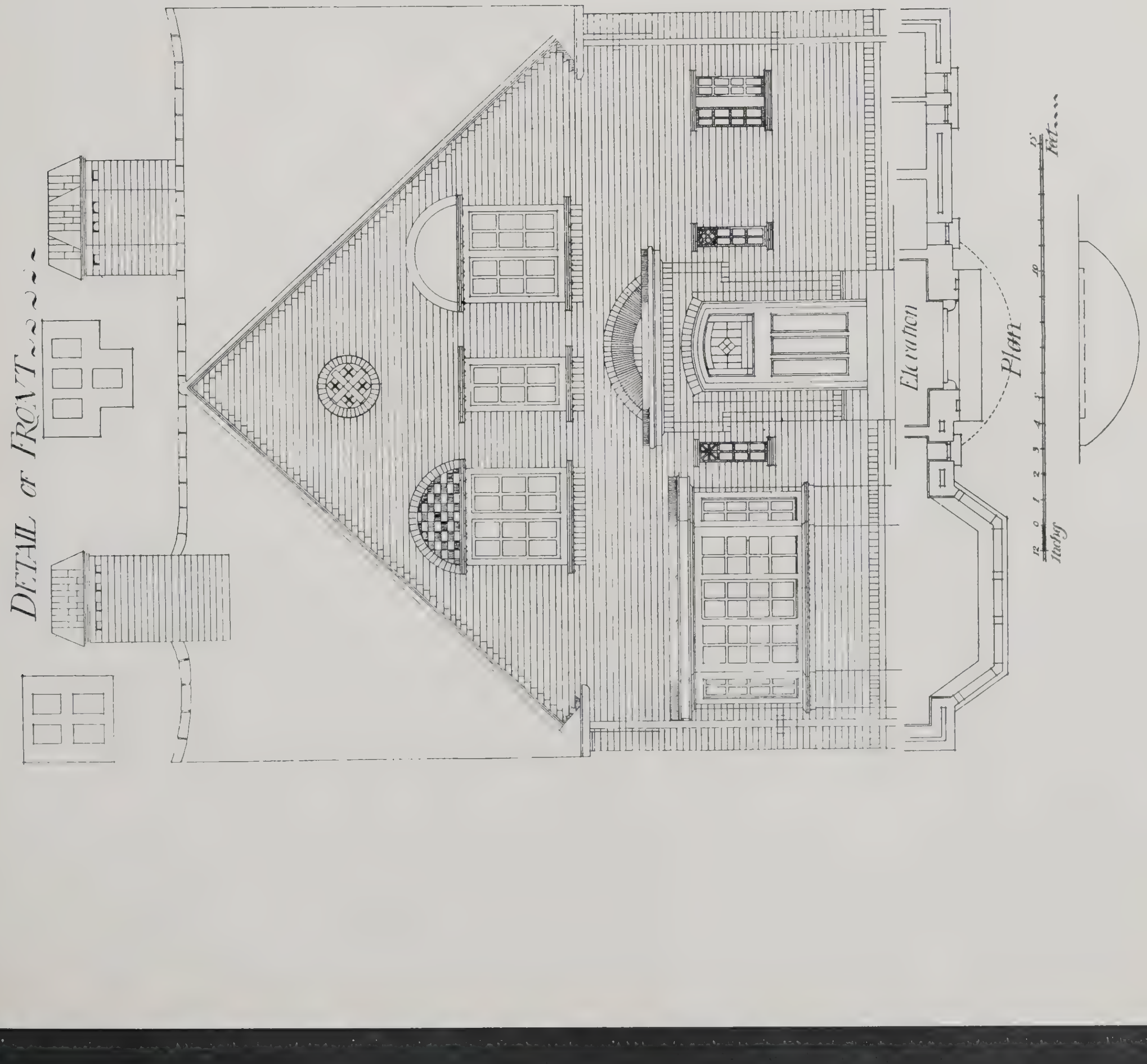


House in Reed Pond Walk, Gidea Park.



Buckland & Farmer, Archts.



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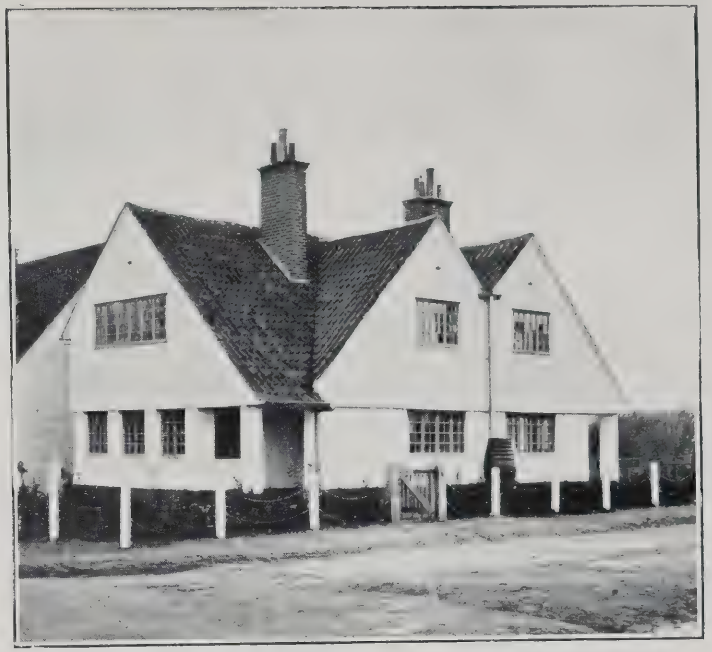
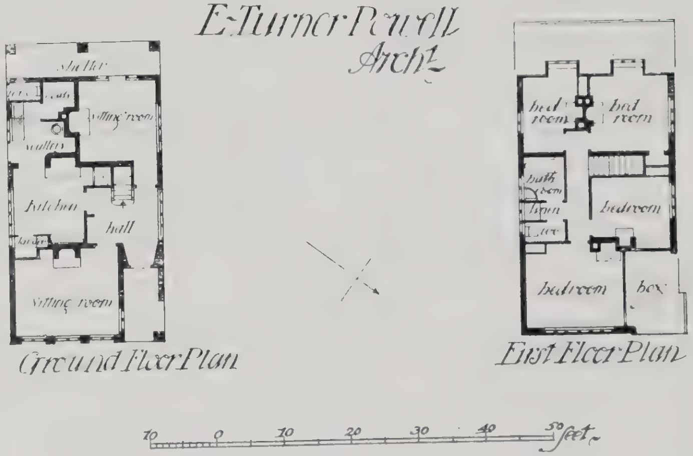
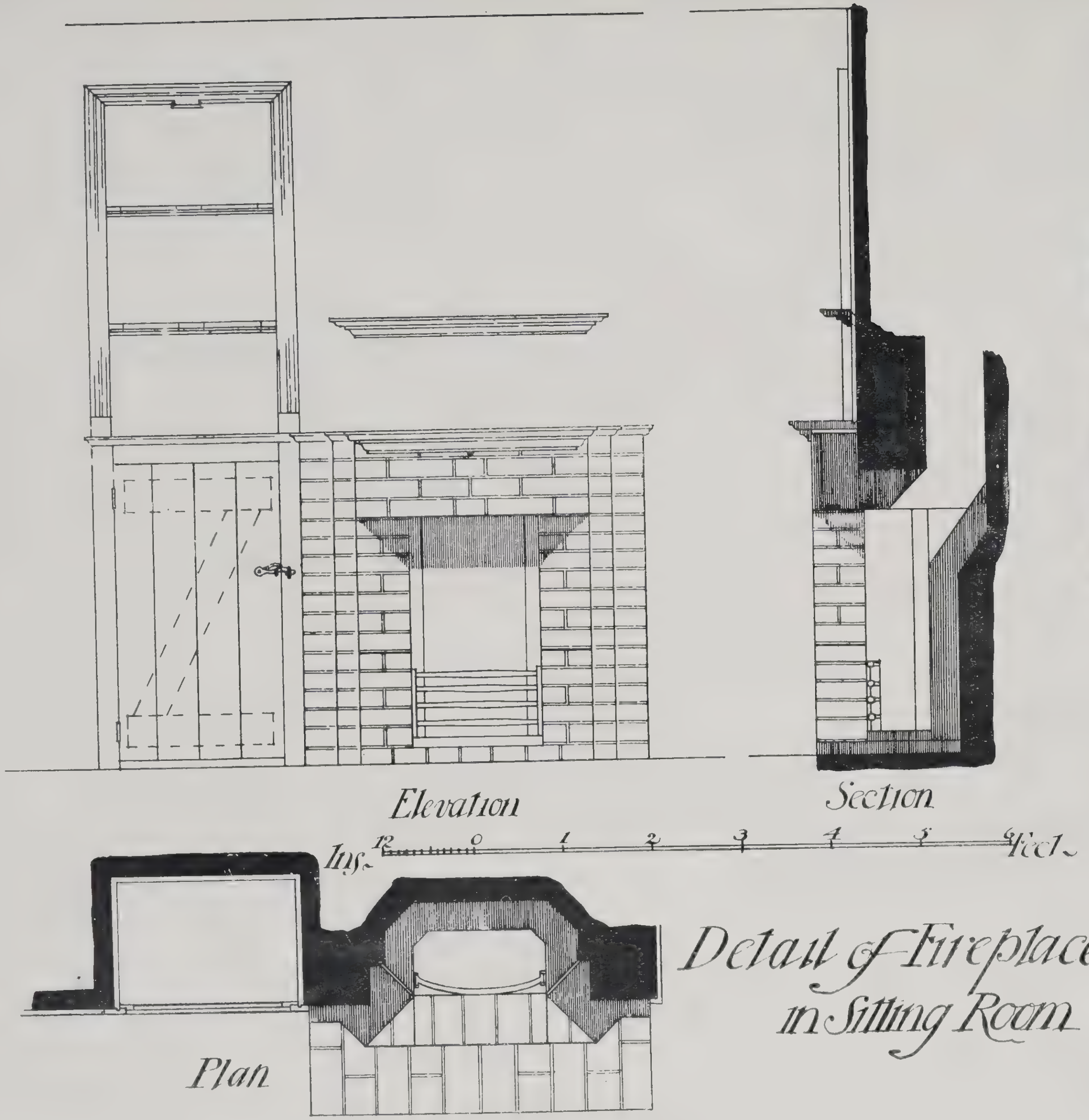


House in Heath Drive Gidea Park

E. Turner Powell Archt.





Detail of Fireplace in Sitting Room

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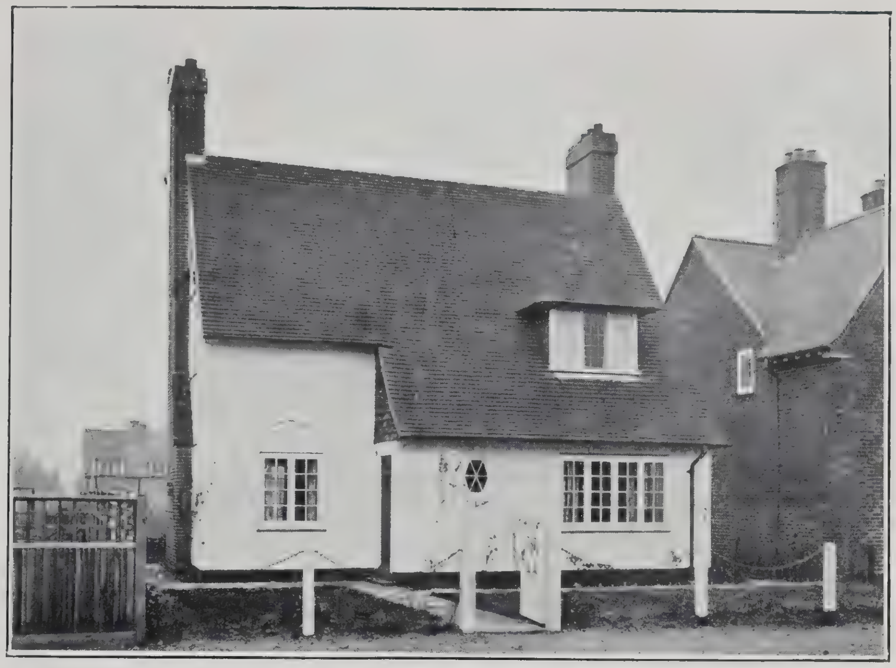
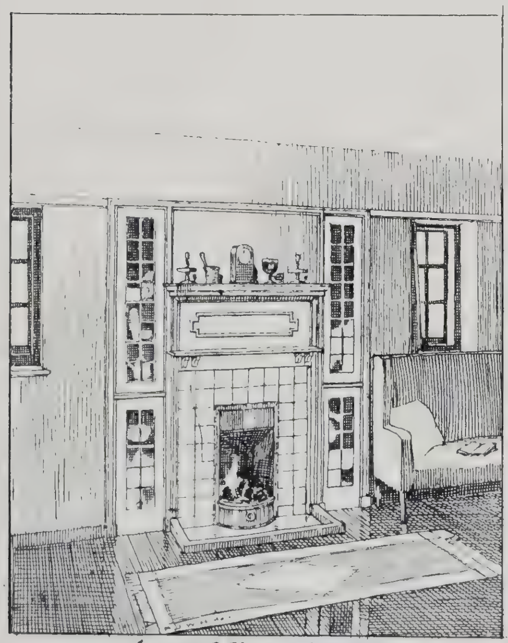
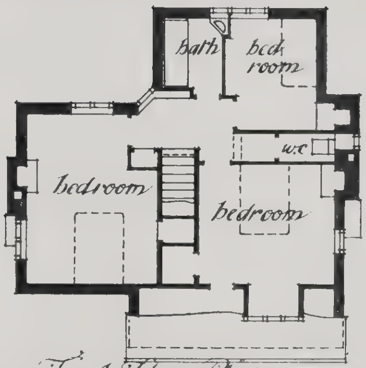


COTTAGE~MEADWAY GIDEA PARK

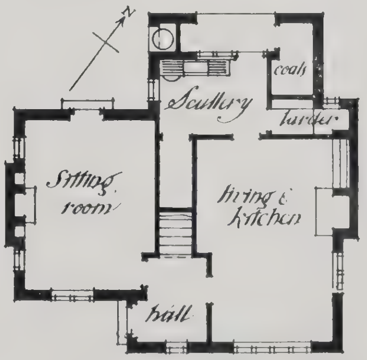
Herbert A. Welch Archt.



Living Room Fireplace



First Floor Plan



Ground Floor Plan

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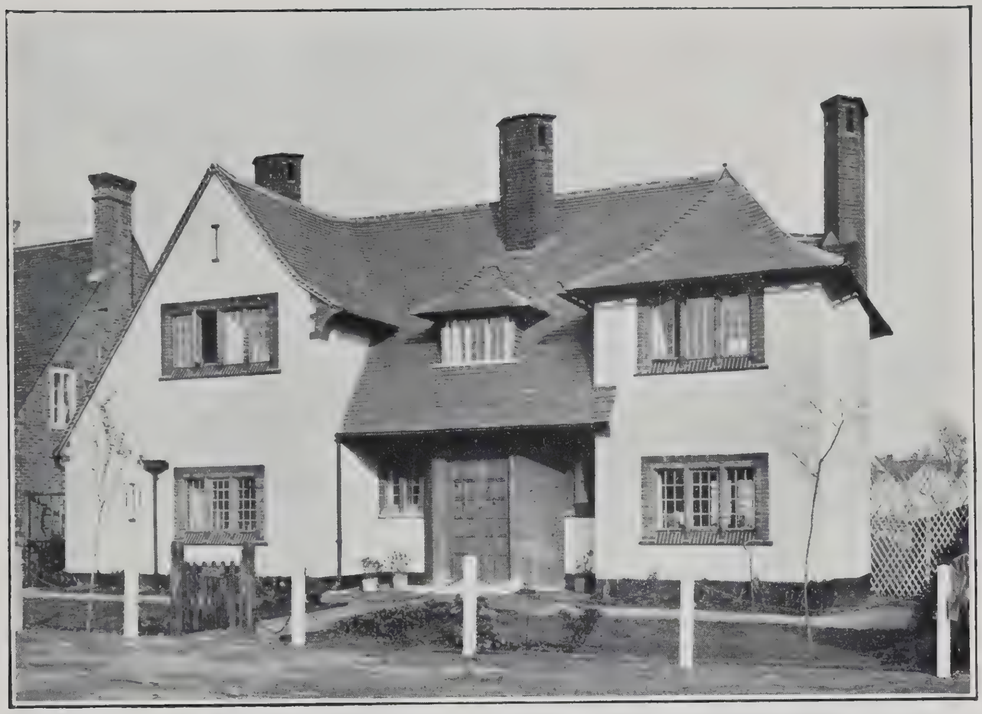
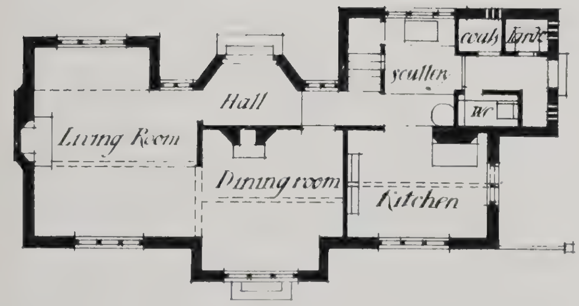
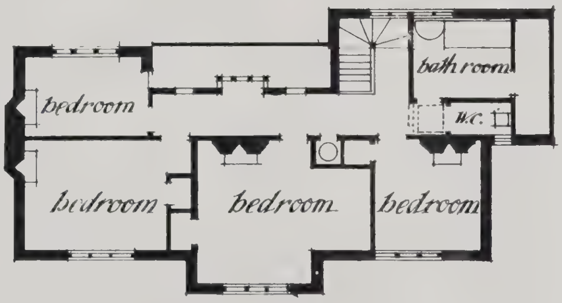


House in Parkway
Gidea Park.

Forbes & Tate Archts.



Ground Floor Plan



First Floor Plan

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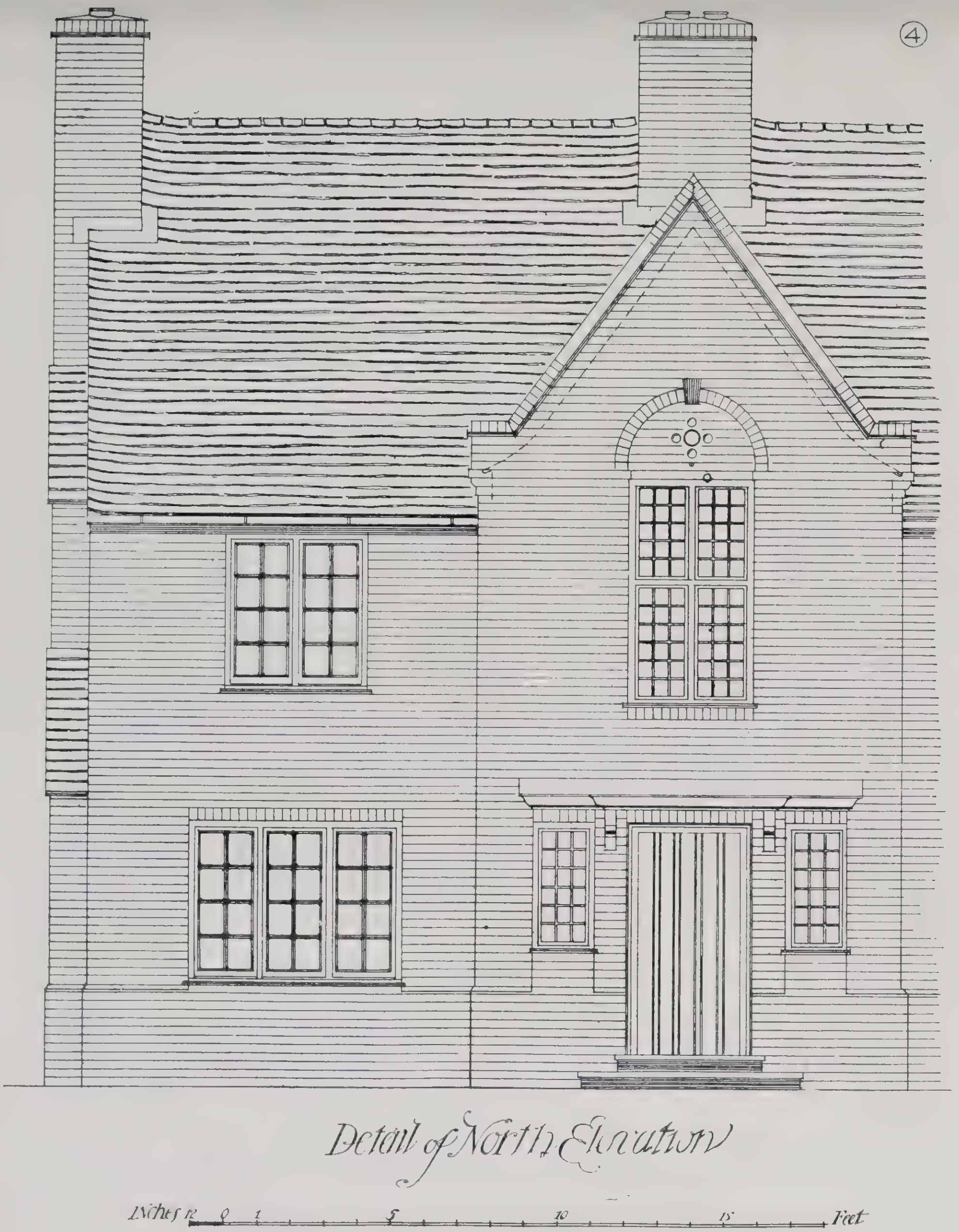
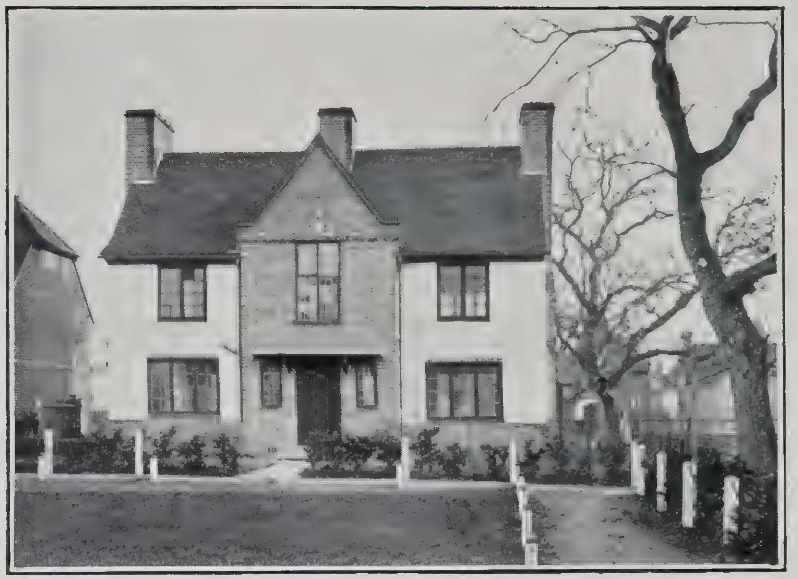
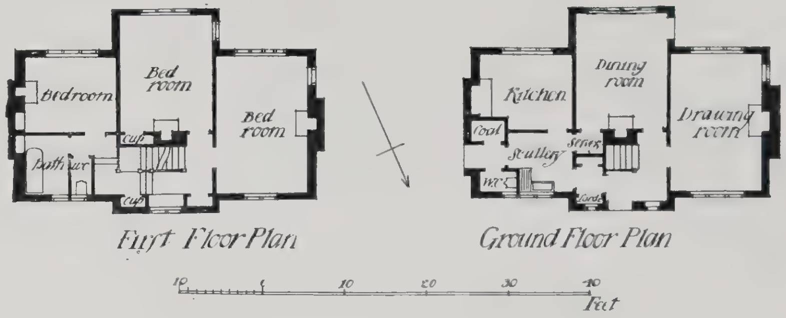


Detail of North Elevation



House in Reed Pond Walk ~~~ Gidea Park ~~

H-Townshend Morgan Archt.



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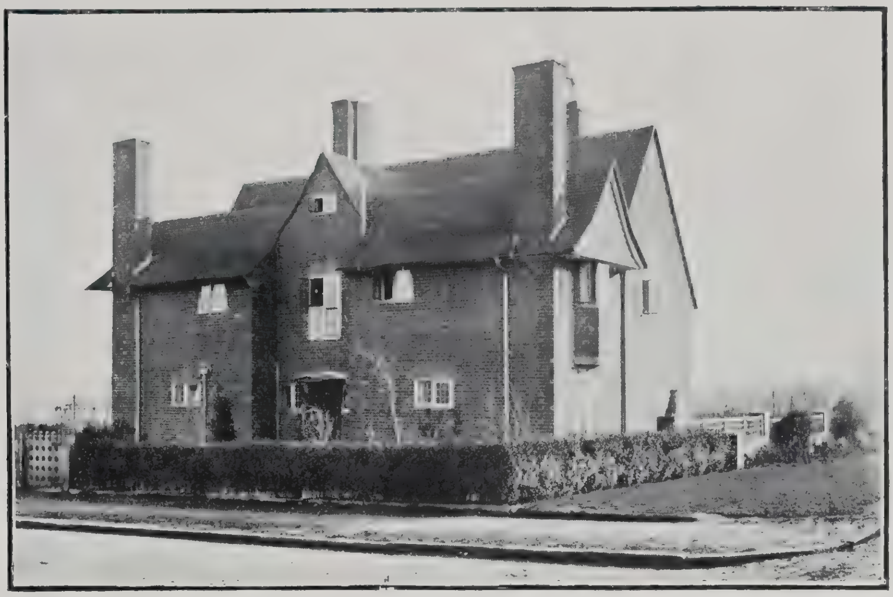
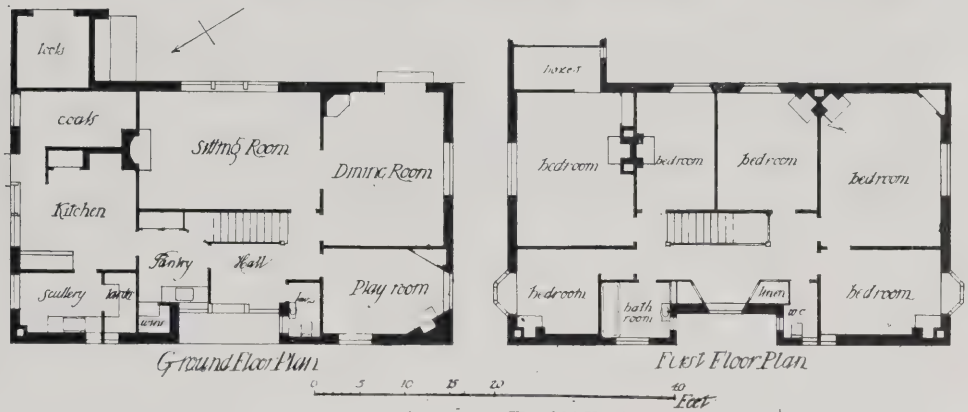
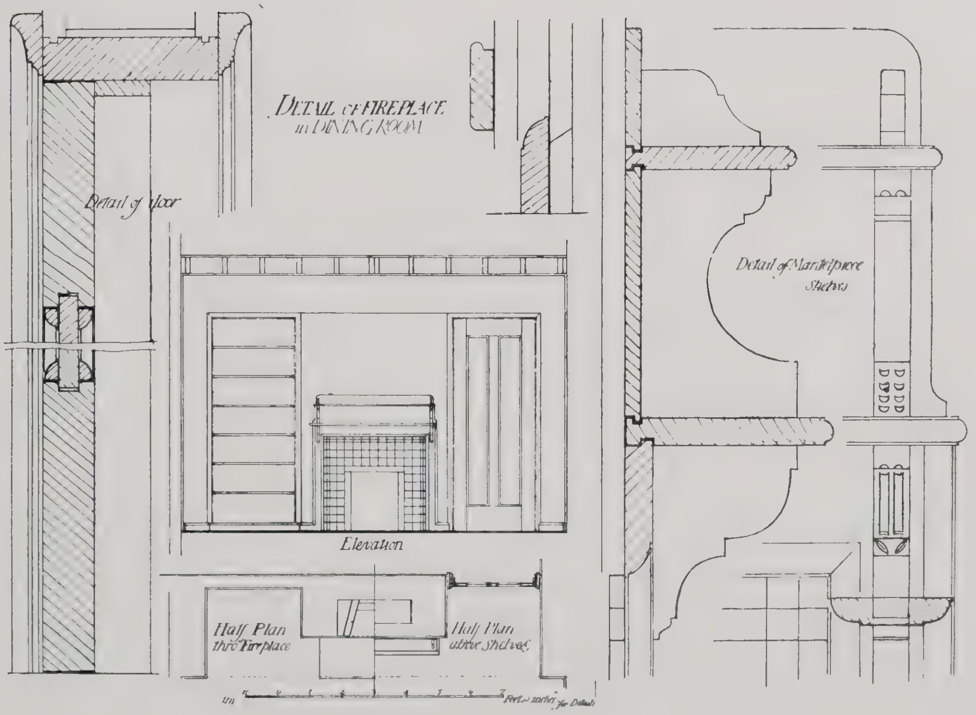




HOUSE in MEADWAY
HAMPSTEAD GARDEN SUBURB
W. Curtis Green
Archt.


Detail of Fireplace in Dining Room
Detail of door
Detail of Mantelpiece Shelves
Elevation
Half Plan thro' Fireplace
Half Plan above Shelves
Feet — inches for Details

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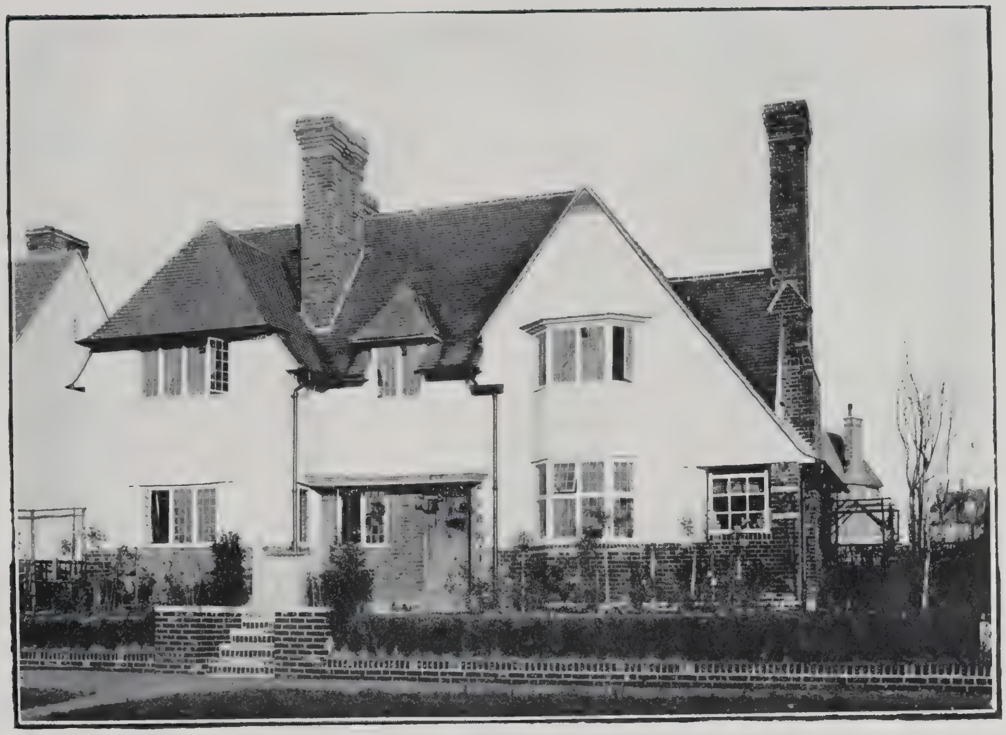
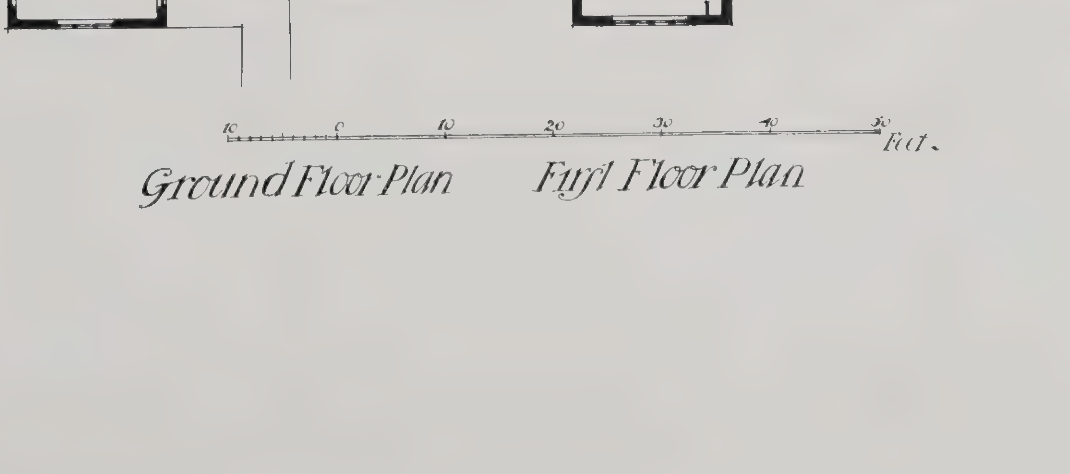


HOUSE IN WILDHATCH - Hampstead Garden Suburb

F. M. Wilson
Archt.



Ground Floor Plan First Floor Plan

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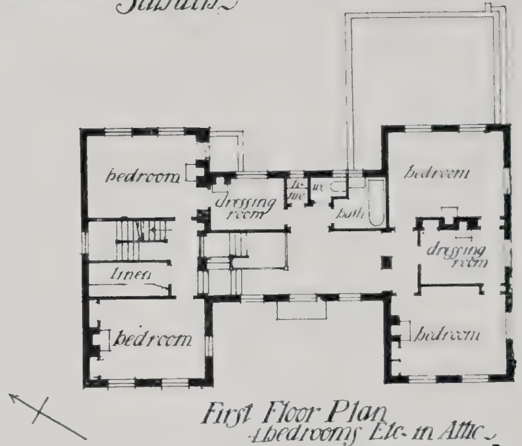
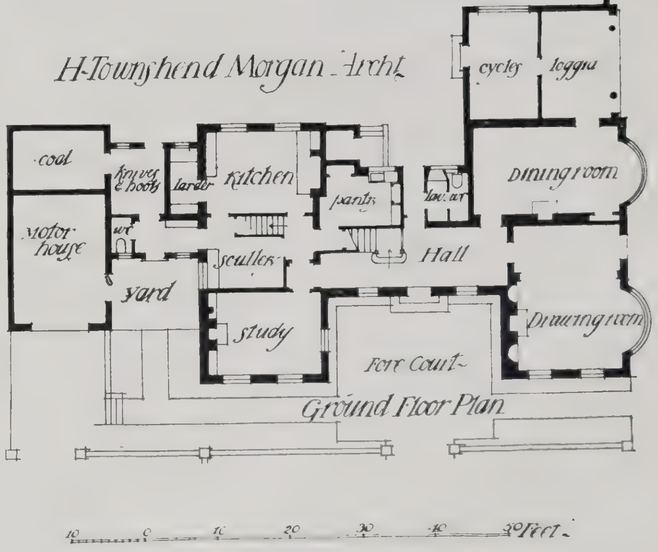
House in Heathgate
Hampstead Garden
Suburb

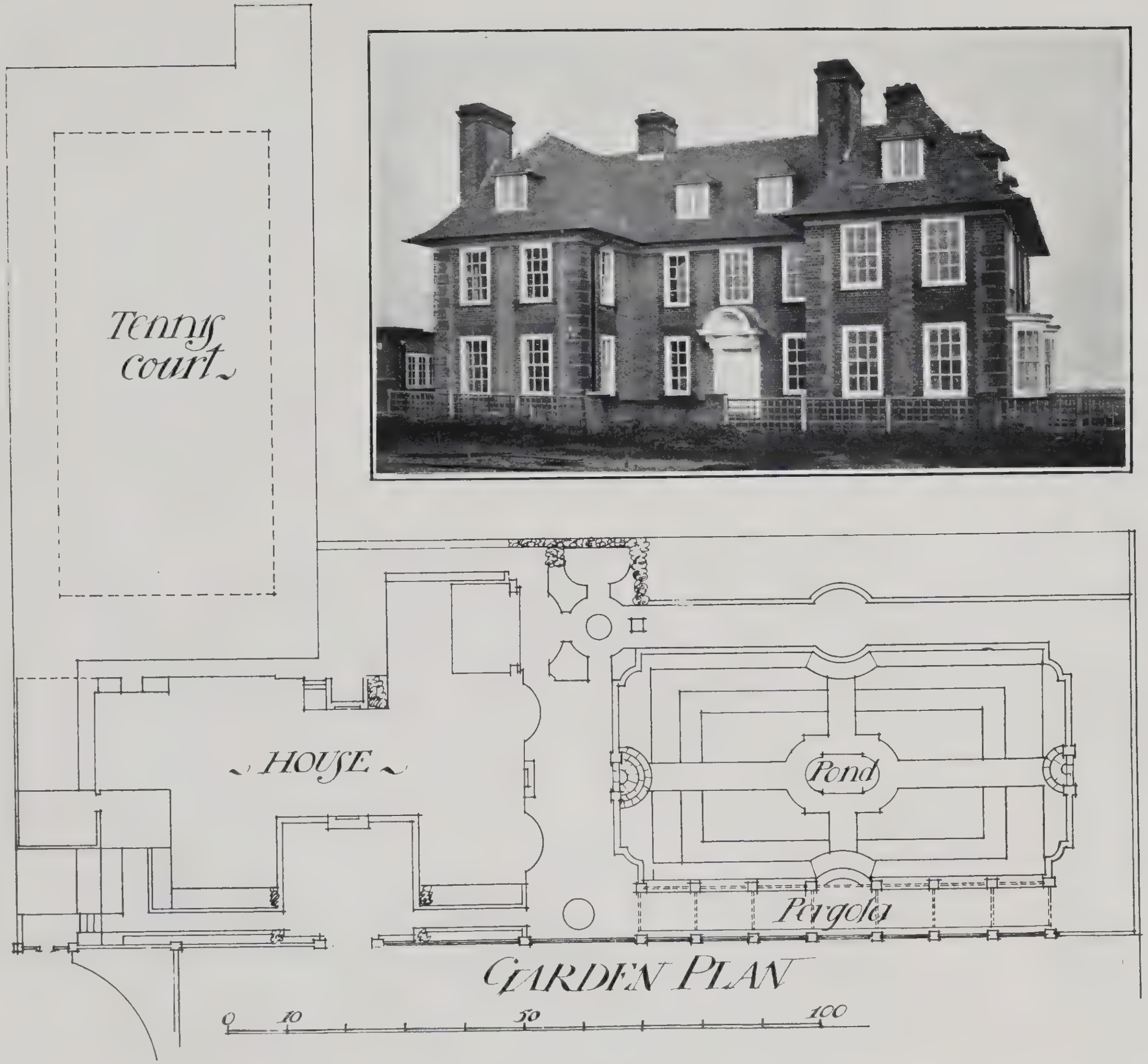


First Floor Plan
Bedrooms Etc. in Attic



Ground Floor Plan

H. Townshend Morgan Archt.



GARDEN PLAN

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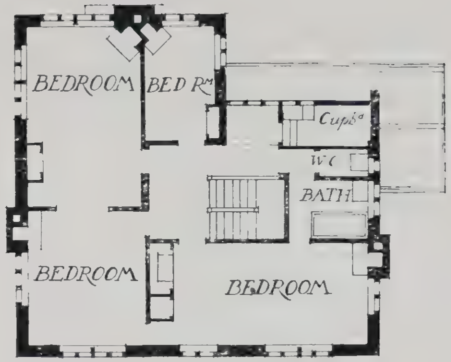
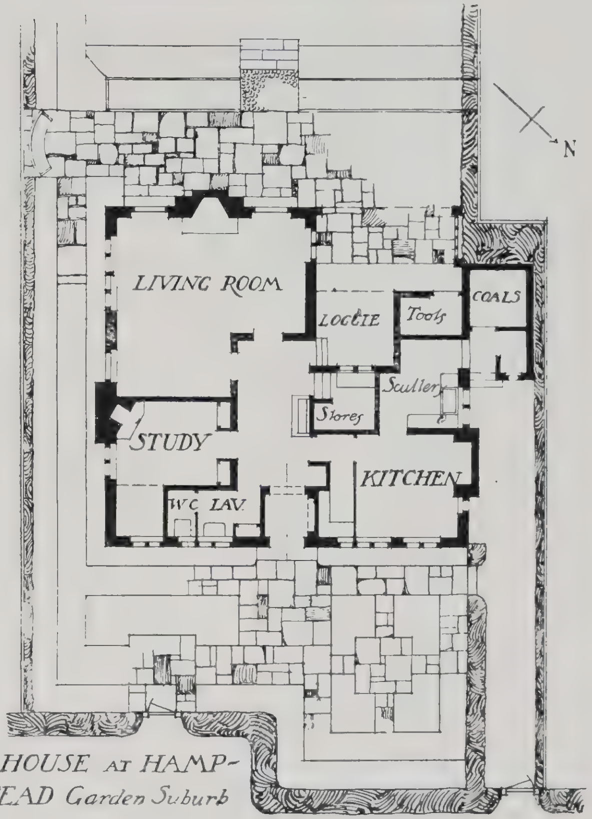
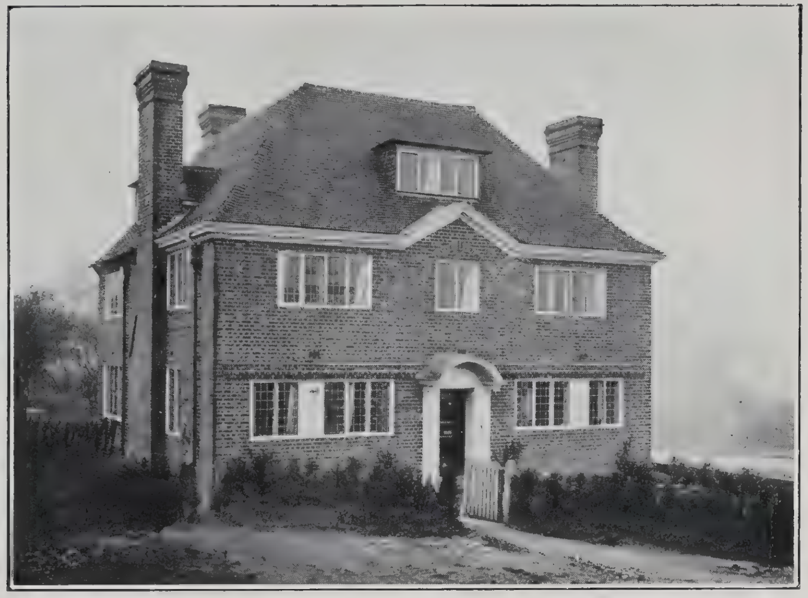
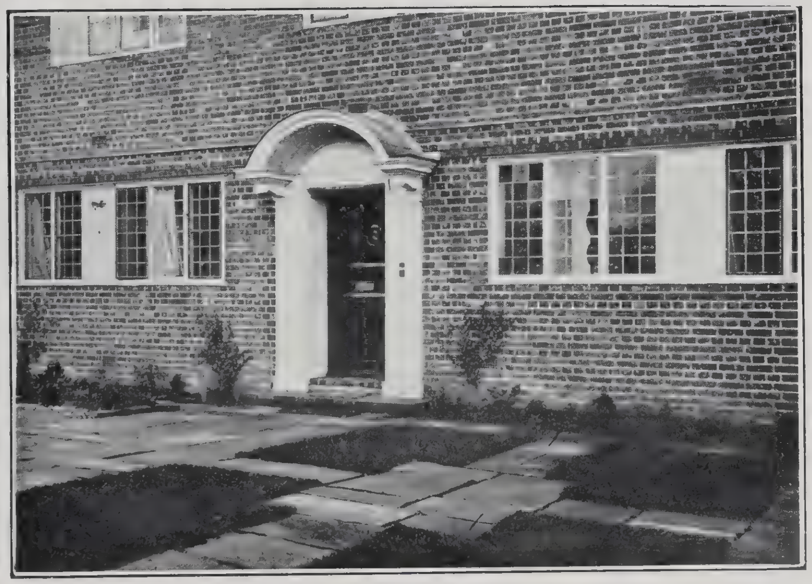




HOUSE AT HAMPSTEAD Garden Suburb
Evelyn Simmons Archt





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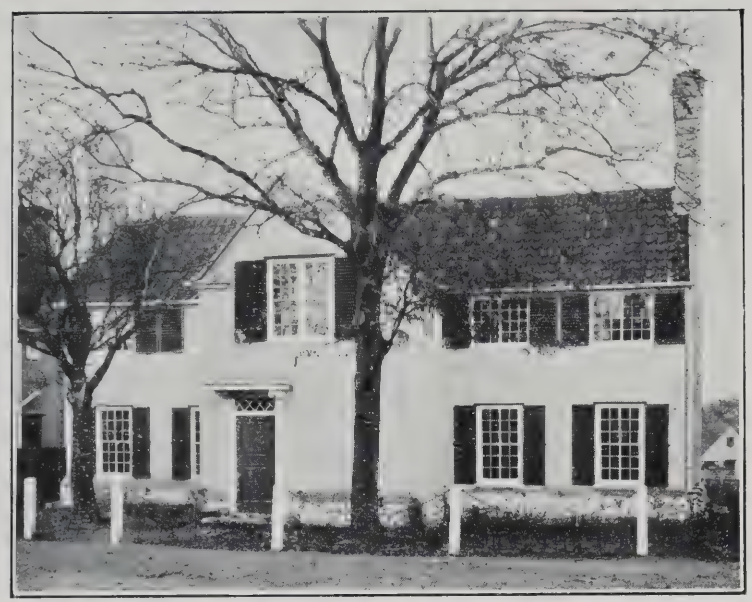
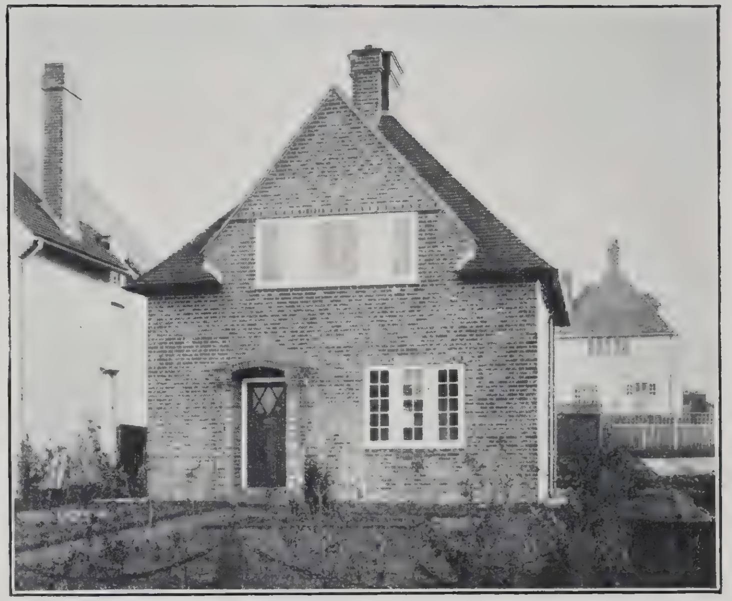
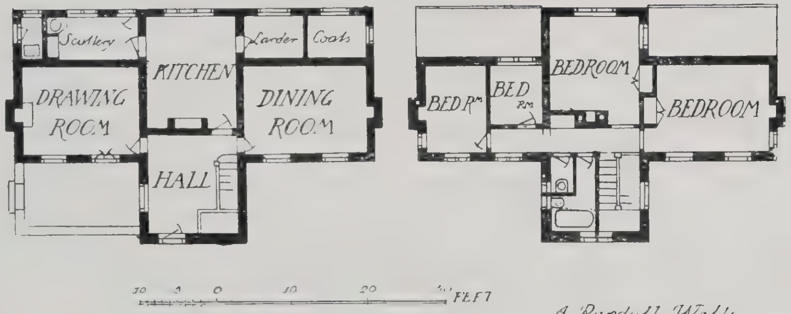


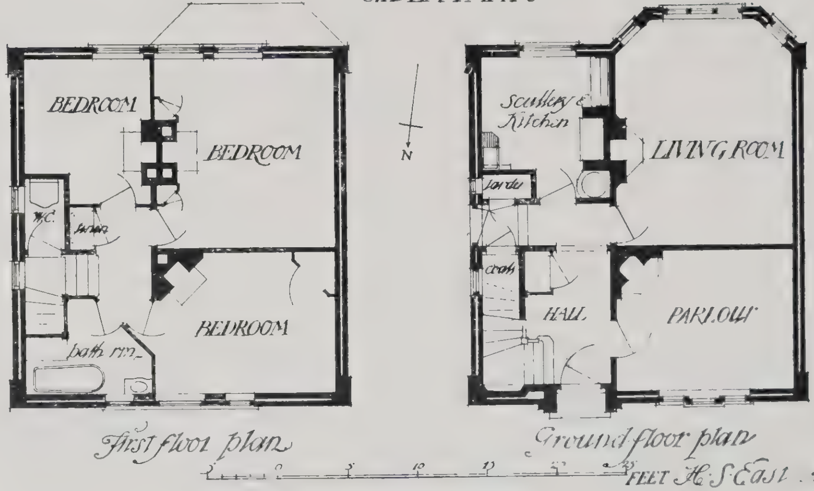


HOUSE IN REED POND WALK
GIDEA PARK



A Randall Wells
Archt

HOUSE IN RISEBRIDGE Rd
GIDEA-PARK



H. S. East Archt

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SPECIAL SECTION:

SOME NOTABLE BUILDINGS OF THE YEAR.

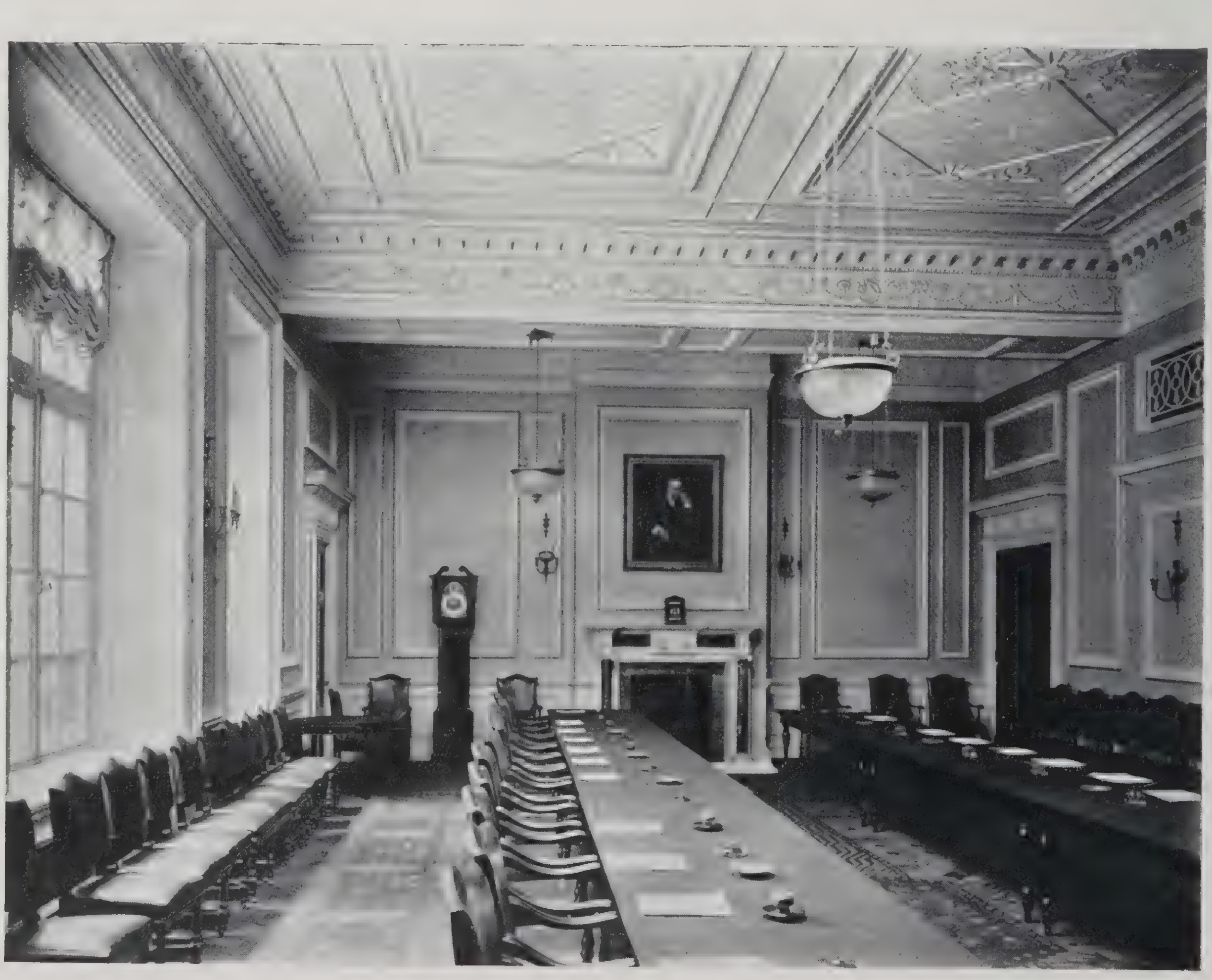
1911

THE ROYAL AUTOMOBILE CLUB, PALL MALL, LONDON.

The new building erected in Pall Mall for the Royal Automobile Club was occupied by members in the early part of the summer. The architects were Messrs. Mewès and Davis, with whom was associated Mr. E. Keynes Purchase, F.R.I.B.A., honorary architect of the club. The site was formerly occupied by the old War Office, and is, for a building of this description, almost ideal—an oblong 228 ft. by an average of 148 ft., facing north and south, with its two longer sides having frontages to Pall Mall and Carlton Gardens. Its principal drawback would seem to have been the restrictions imposed by the Crown lease, which appear to have determined the height of the main cornice in a line with that of the Carlton Club adjoining. The length and height of the façade, therefore, were arbitrarily imposed upon the building, and the architects were left to treat this pre-ordained shape to the best advantage.

The façade to Pall Mall has a rusticated ground-floor storey with deeply recessed semicircular-headed windows, and two floors above marked by an Ionic colonnade, the whole being crowned by a balustraded parapet. As central feature is a projecting portico, with columns carrying a pediment, the tympanum of which is filled with sculpture (by M. Faivre, of Paris) representing Science as the inspiration of the automobile industry. At each end is a pylon treatment, with sculptured cartouches representing Earth, Air, Fire, and Water, by M. Ragon, of Paris, who also executed the cartouche over the main entrance, and prepared the models for the remainder of the sculpture on the building, such as capitals, keystones, etc.—all which was done under the supervision of the architects. This façade to Pall Mall and the rear elevation to Carlton Gardens are faced with Portland stone. Above the line of the parapet is an attic storey, set back and roofed with green Westmorland slates with copper dressings.

The main entrance gives access to a fine entrance hall out of which steps lead up to a large oval vestibule which is carried through two floors. From this vestibule, corridors run right and left respectively to the club-room and the restaurant, while on the south side is a large gallery used as a concert hall and ballroom, having a stage at one end and a balcony at the other. The windows of the gallery open out on to a terrace which extends across the whole of this side of the building. Returning to the entrance hall we find other stairs leading right and left to the strangers' room and the reception-room respectively, and flights winding down to the lower ground floor and the basement. The former is largely devoted to the kitchen and service department, and the latter to a swimming-bath (86 ft. by 30 ft. by 8 ft. deep at one end), Turkish bath, fencing-room, rifle range, rackets courts, dressing-rooms, lavatories, etc. On the first floor are the billiard-room and card-room facing Pall Mall, the members' private dining-room (over the restaurant), committee-room, library, etc. (over the club-room); on the second floor are a large room over the gallery and opening on to a terrace overlooking the Park, and the club's offices—which are extensive; with suites of bedrooms and sitting-rooms on the floors above. In all there are more than a hundred bedrooms.



COMMITTEE ROOM, ROYAL AUTOMOBILE CLUB, PALL MALL, LONDON. MEWÈS AND DAVIS AND E. KEYNES PURCHASE, F.R.I.B.A., ARCHITECTS.

ENTRANCE HALL, ROYAL AUTOMOBILE CLUB.

Nearly 2,000 tons of steelwork were used for the skeleton ich supports the walls and floors—not even the solid-king front wall is self-supporting, the inside portions of st of the piers being hollow, and the space utilised for itilation ducts, pipes, etc. The internal partition walls l piers are built in 2½ in. to 4 in. thick pumice concrete cks and hollow brick tiles, supported at each floor on el beams or girders. Floors are of reinforced concrete out 6 in. thick. Several girders were required to span r large rooms 40 ft., and to carry about 350 tons each, l it is interesting to note that the columns which are so ective a feature of the swimming-bath are really nstructive, as they support building on this side, being el stanchions enclosed by con-te and decorated with mosaic.

he building is equipped with ctric and hydraulic lifts; ven-tion and heating is on a system ch enables the air in any room be regulated irrespective of ers; and lighting is, of course, electricity. The mechanical ipment of the building is very nplete, a vacuum-cleaning sys-n is installed, and a telephone hange (including 120 telephones) provided.

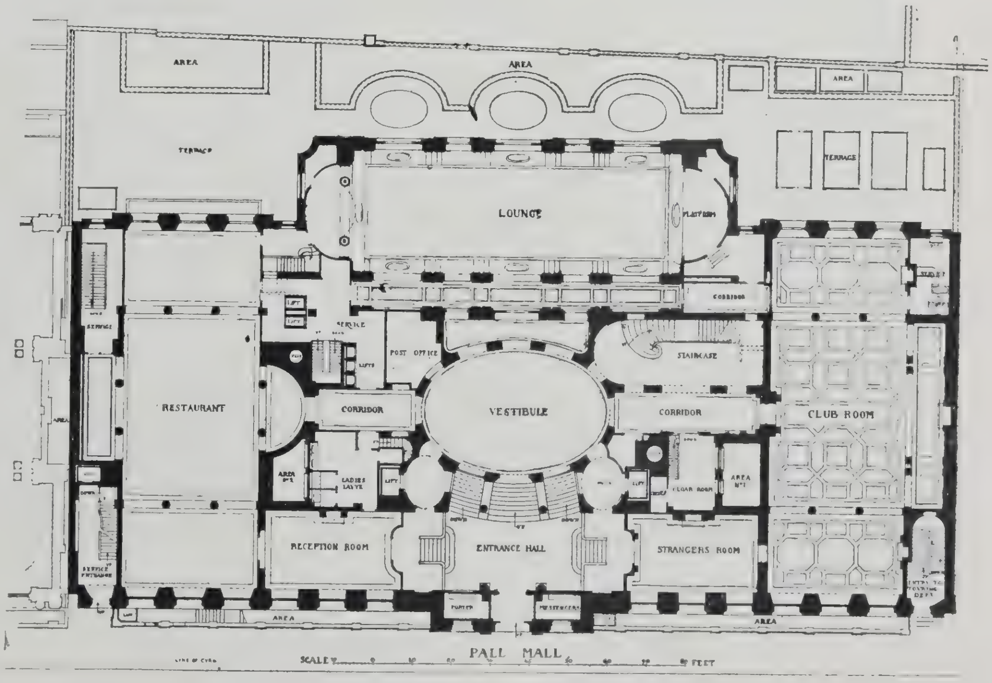
he total cost of the building is ed to have been more than 0,000. The foundations were ried out by Messrs. Trollope and ls, Ltd., and the superstructure the Building Construction Com-y, Ltd., of London.

lessrs. Doulton and Co., Ltd., e responsible for the sanitary ngs, and the plumbing and inage work; the last-named, owing to the sub-basement being below the sewer, having required two systems of drainage, one suspended from the ceiling of the lower ground-floor, which is discharged by gravitation, and the other system lifted by ejectors (by Hughes and Lancaster). Messrs. Doulton also faced the walls of the bath-rooms, dressing-rooms, and lavatories with Parian-surface tiles.

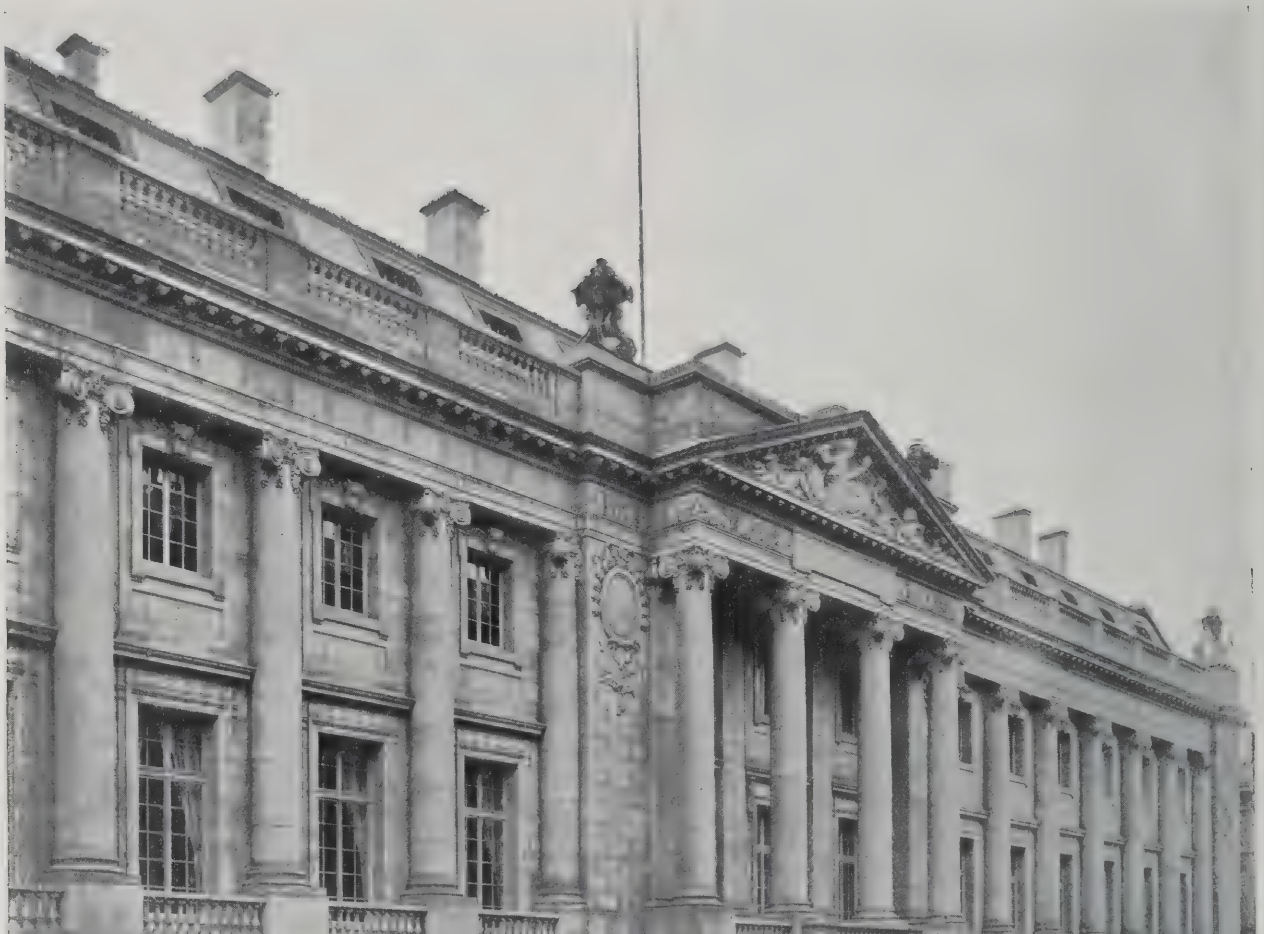
Messrs. Farmer and Brindley carried out the marble work to the swimming-bath and plunge-baths, dadoes, floorings, etc., and Messrs. W. E. Rendle and Co. executed the steelwork, glazing, and lead coverings to all skylights —the light over the oval vestibule, which is extremely effective, having called for particularly careful attention.

The swimming-bath is constructed of concrete reinforced with Indented bars (supplied by the Indented Bar and Concrete Engineering Co., Ltd.), while for the intermediate layer of cement between the asphalt lining and marble facing of the bath expanded brass (supplied by the Expanded Metal Co., Ltd., of London and West Hartlepool), has been employed; Expanded Metal having also been used as lathing for suspended ceilings, etc.

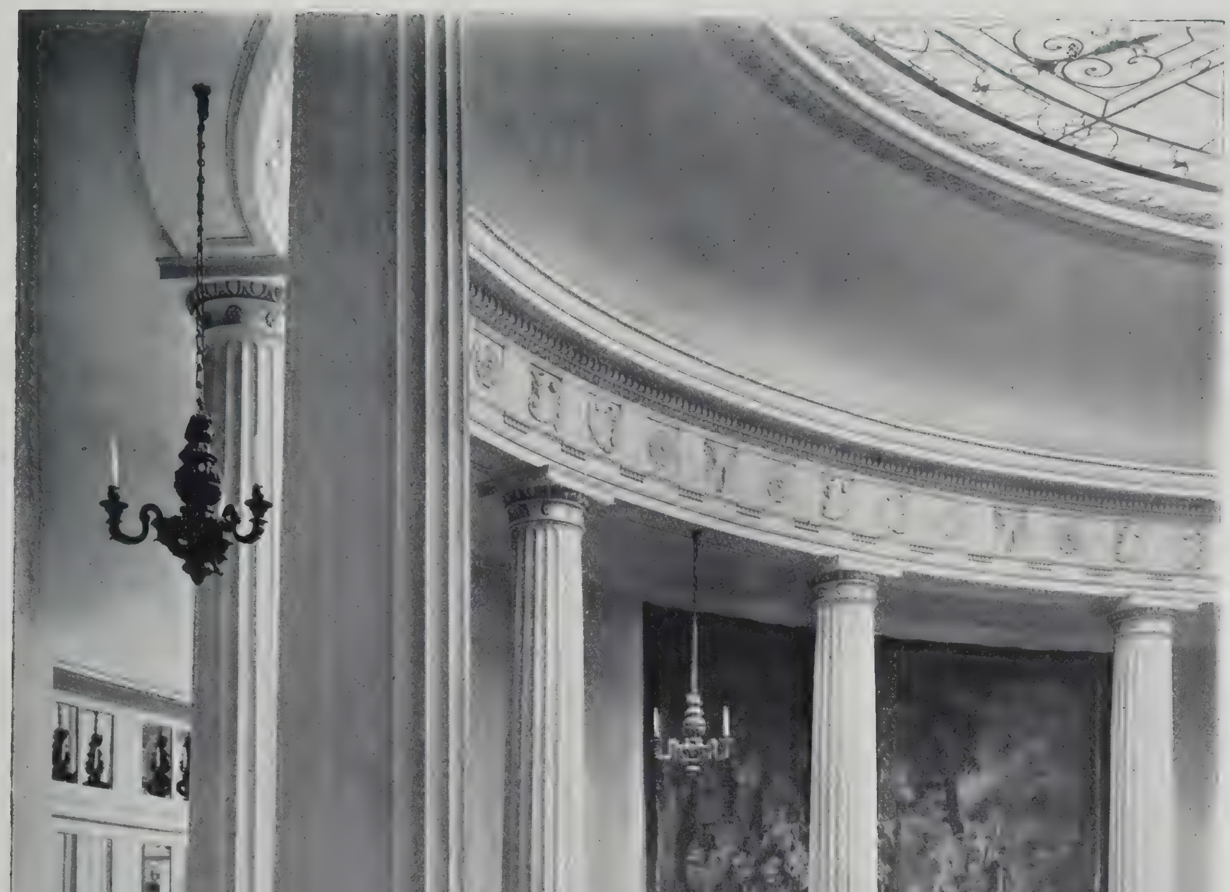
Messrs. Geo. Jackson and Sons, Ltd., executed the plasterwork in the committee-room, billiard-room, card-room, and library, the decorations for which (except in the card-room) are taken from old Adam models. The heating and ventilation was carried out by Messrs. R. Crittall and Co. Messrs. Garston, Ltd., executed pavements and staircases with Echaillon marble, the treads of the vestibule stair being in one piece 15 ft. long, and the pavements laid so closely as to make the joints almost imperceptible. Granolithic paving was laid by Messrs. Stuart's Granolithic Co., Ltd.; lifts (eight in number) were installed by the Otis Elevator Co., Ltd.; the ornamental ironwork was executed by Hart, Son, Peard, and Co., steel counter, etc., in post-office by Art Metal Construction (Roneo), Ltd., window fittings, locks, etc., by James Gibbons, pavement lights, ceiling lights, floor lights and fire-resisting glazing, by the British Luxfer Prism Syndicate, Ltd., electric-light fittings by Baguès Frères, of Paris, French "stuc" work by H. Germain, of Paris, partitions by J. A. King and Co., gates and balustrades by the Maison Vian, Portland stone by the Bath Stone Firms, Ltd., glazed bricks and tiles and "Renton" floor channel for swimming-bath by the Leeds Fireclay Co., Ltd.; electric lighting and power installations by Higgins and Griffiths.



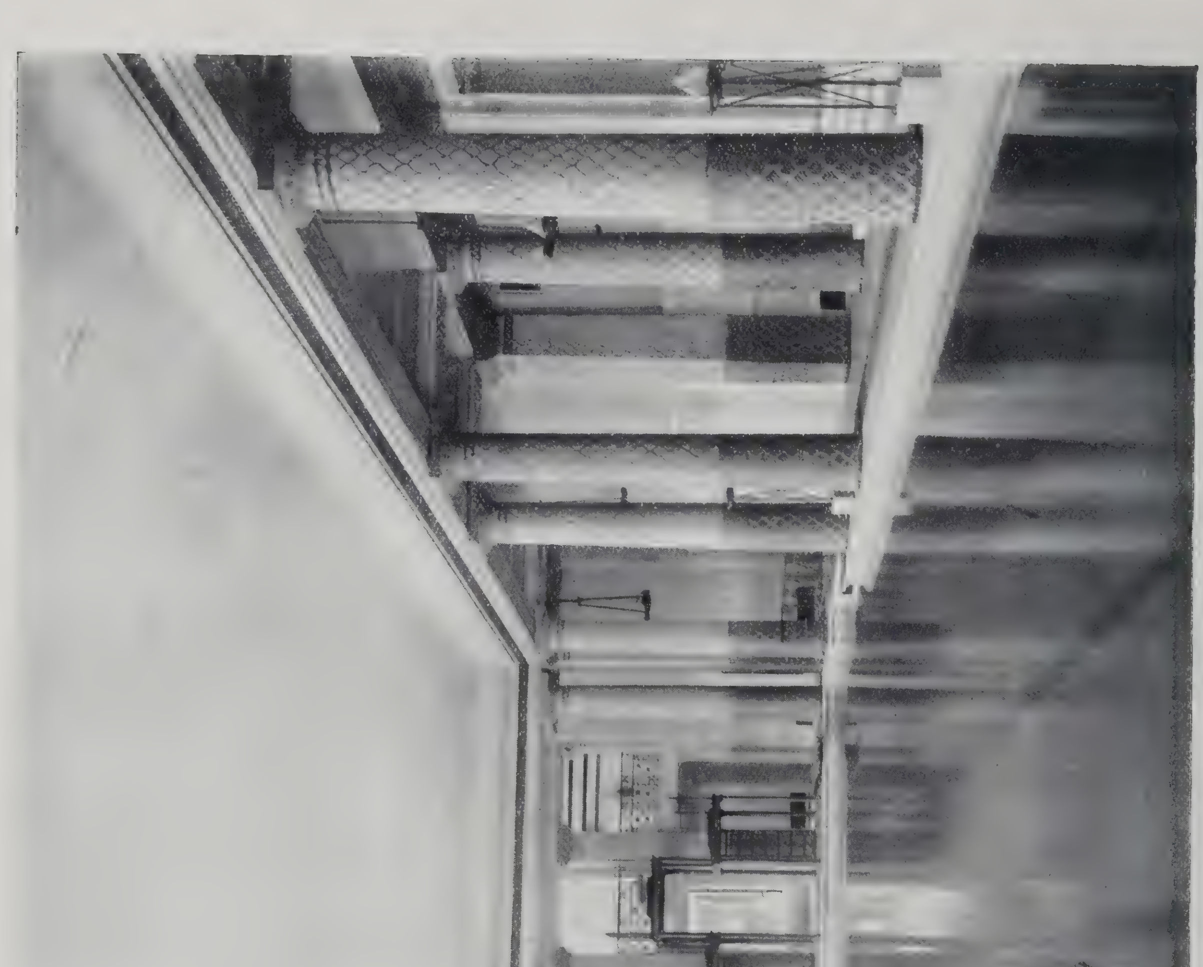
ROYAL AUTOMOBILE CLUB: GROUND-FLOOR PLAN.



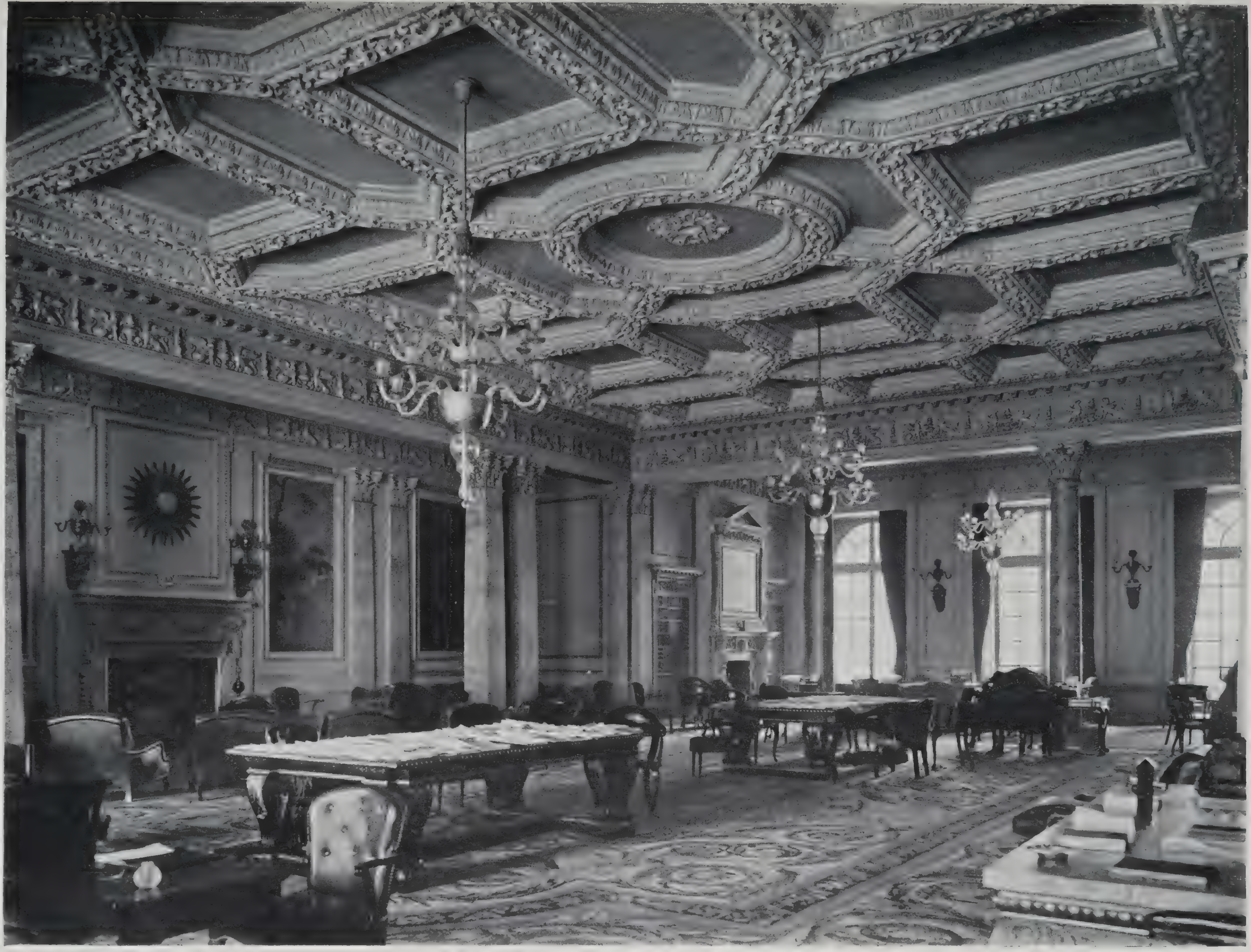
ROYAL AUTOMOBILE CLUB, PALL MALL, LONDON. MEWES AND DAVIS AND E. KEYNES PURCHASE, ARCHITECTS.



ROYAL AUTOMOBILE CLUB, PALL MALL: UPPER PART OF VESTIBULE, FIRST FLOOR.



ROYAL AUTOMOBILE CLUB: THE SWIMMING-BATH. MEWÈS AND DAVIS AND E. KEYNES PURCHASE, ARCHITECTS.



ROYAL AUTOMOBILE CLUB, PALL MALL, LONDON: THE CLUB-ROOM. MEWÈS AND DAVIS AND E. KEYNES PURCHASE, ARCHITECTS.

THE NATIONAL GALLERY EXTENSION.

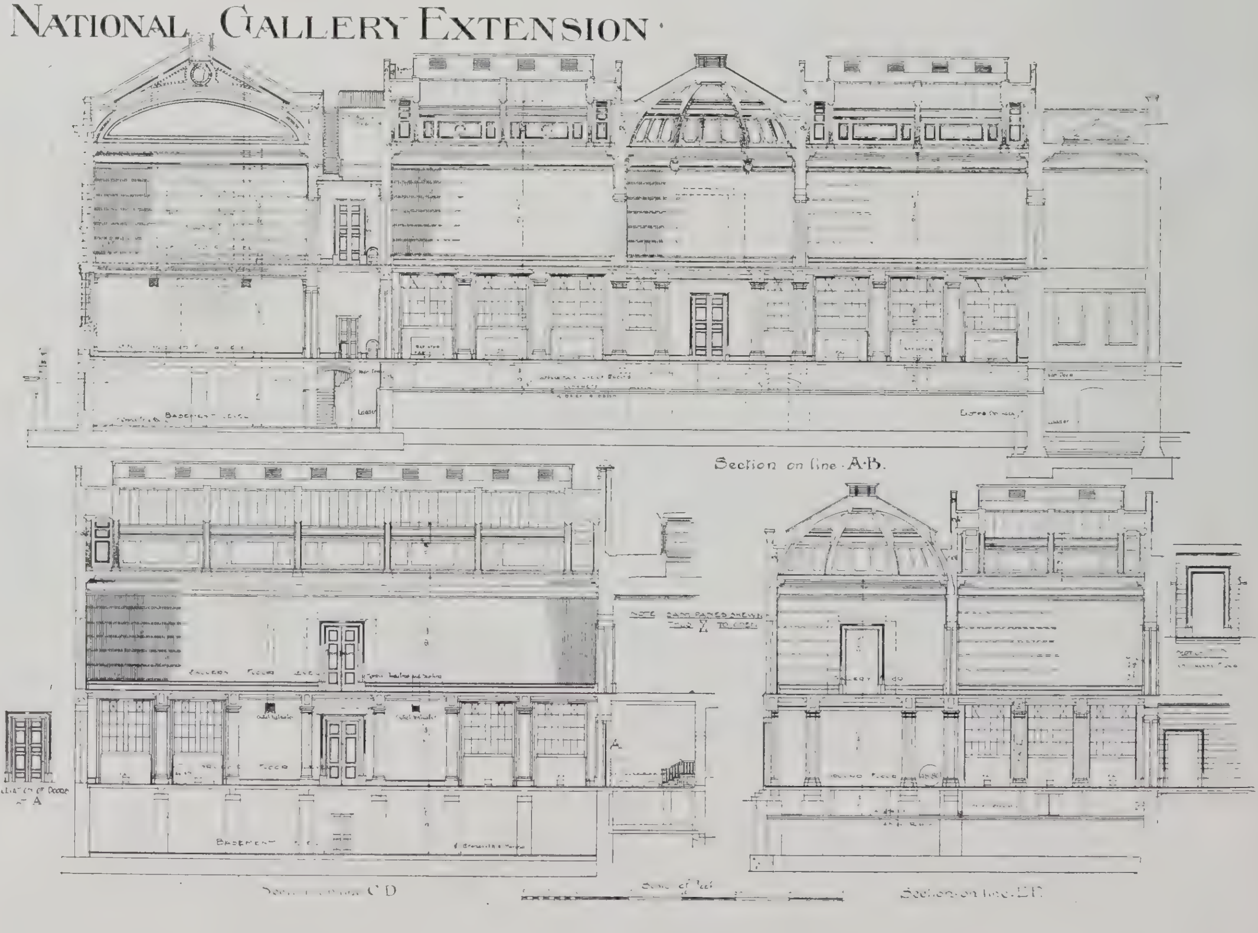
In March last the new rooms at the National Gallery, London, were opened to the public. Five new rooms have been added on the gallery floor (at first-floor level), while below them on the ground floor are three rooms, with store-rooms in the basement. The additions have been erected on a portion of the St. George's Barracks Yard, and may be said to repeat the arrangement on the eastern side. No doubt eventually other new rooms will be added, and the building will then form a complete rectangle.

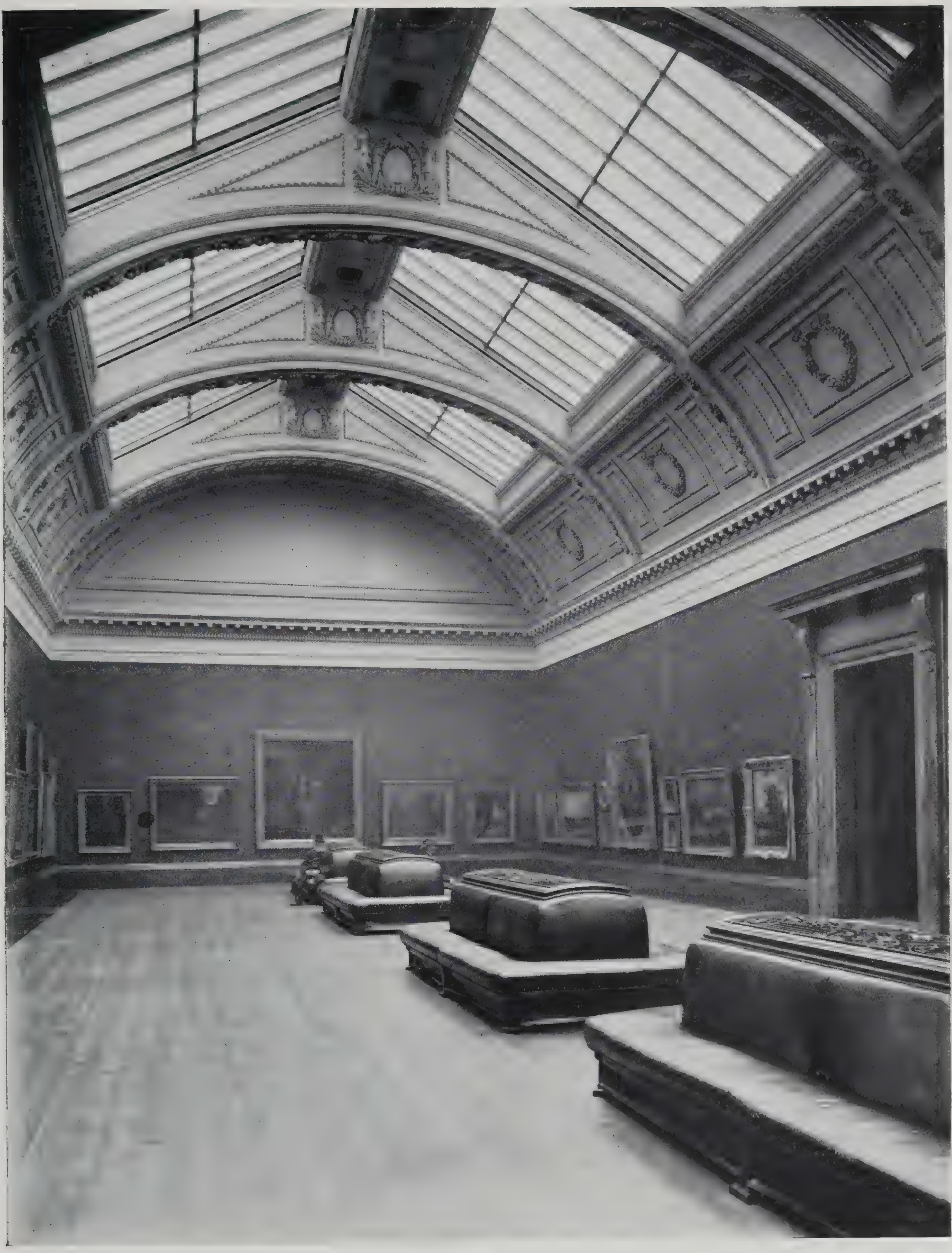
As regards the lighting, it may be noted that over the west gallery (which is nearly 100 ft. long by 40 ft. wide) is a long range of top-lights carried by reinforced concrete ribs, enriched with decorative plasterwork, the effect of which is excellent. The hanging for the walls was the subject of long consideration by Sir Charles Holroyd and the Office of Works, and it will be generally agreed that the painted embossed Morris canvas which has been selected forms a most effective background to the pictures. It is unobtrusive in effect without being dull, easy to keep clean, and possesses the advantage that nail-holes can be obliterated with facility. In the west gallery a dull gold has been employed, in the centre gallery a rich Cordova red, and in the other three rooms a green canvas.

What is particularly important, however, about the extension is that the constructional work has been carried out in a thoroughly fire-resisting manner. The floors and roofs are of reinforced concrete on the Kahn system (Trussed Concrete Steel Co., Ltd.), and the top-lights and lanterns are of steel glazed with wired glass. The galleries, too, are fitted with fireproof doors. The floors are of polished oak with a black marble margin, and the door-openings are enriched by massive architraves and jamb-linings of green Tinos marble. Very few joints are made in these doorways, and most of the stones measure over 12 ft. in length, some weighing more than three tons.

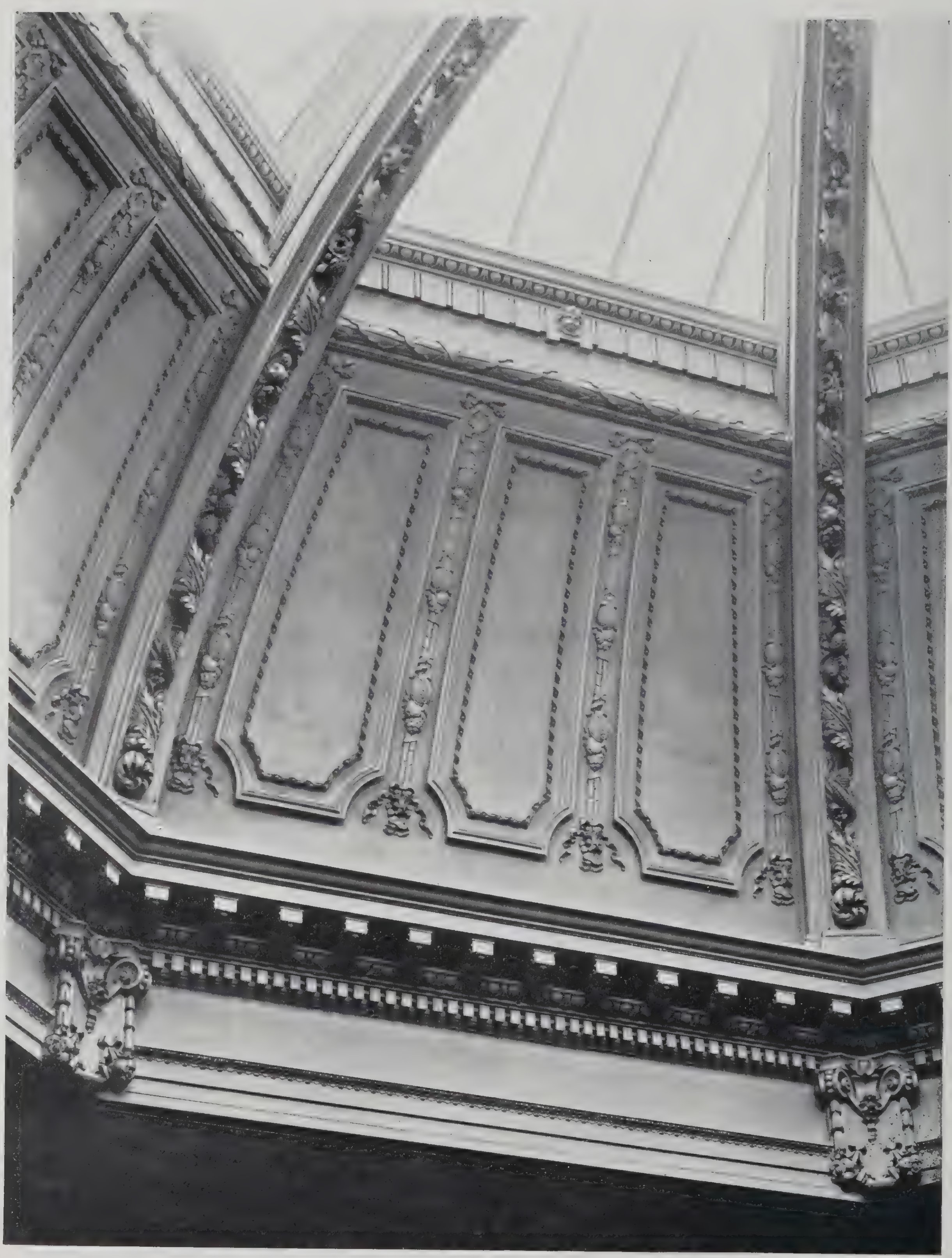
The west elevation of the extension has been carried out in Portland stone, and is designed in harmony with the main front. The architect responsible for the desi and construction of the new work was the late Mr. H. Hawks, I.S.O., of H.M. Office of Works. The gener contractors for the extension were Messrs. F. and H. Higgs (clerk of works, Mr. Le Marie); the reinforced co crete work having been carried out by Messrs. Willia Moss and Sons, Ltd. The extension is the commenceme of a scheme for the entire reconstruction of the Nation Gallery, so as to render the whole properly fire-resistin The old building was erected from designs by Willia Wilkins in 1832–8, and the construction of the 'thirties not such as to meet modern requirements. At the prese time, therefore, work is in progress on rooms to the rig and left of the main entrance, where new floors and roo are being provided. The general contractors for th work are William Moss and Sons, Ltd., the reinforc concrete being again on the Kahn system.

In the new galleries which have already been complet the marble doorways were executed by J. Whitehead a Sons, Ltd. Messrs. Whitehead are also executing the ma ble work in the rooms at present being reconstructed. T casements have been supplied by the Crittall Manufacturi Co., the ventilating shafts by the St. Pancras Ironwo Co., the oak floors in the galleries of the extension Howard and Sons, Ltd., and wood-block floors in the modelled rooms by Stevens and Adams. The bulk of t fibrous plasterwork in the extension, and the whole that in the rooms on the east side of the entrance, h been executed by Samuel Wright and Co., Ltd. T Bromsgrove Guild executed decorative plasterwork, a Mr. Gilbert Seale has been responsible for the stone carvi on the exterior. The whole of the glazing of the ne galleries in the extension has been carried out by W. Heywood and Co., who have also reglazed the rooms now course of reconstruction. As a core to the plasterwo Expanded Metal (supplied by the Expanded Metal C Ltd., of London and West Hartlepool) has been used.





NATIONAL GALLERY EXTENSION, LONDON: THE NEW WEST GALLERY.
THE LATE H. N. HAWKS, I.S.O. (H.M. OFFICE OF WORKS), ARCHITECT.



NATIONAL GALLERY EXTENSION, LONDON: DETAIL OF DOMED CEILING OVER CENTRE GALLERY.

THE LATE H. N. HAWKS, I.S.O. (H.M. OFFICE OF WORKS), ARCHITECT.

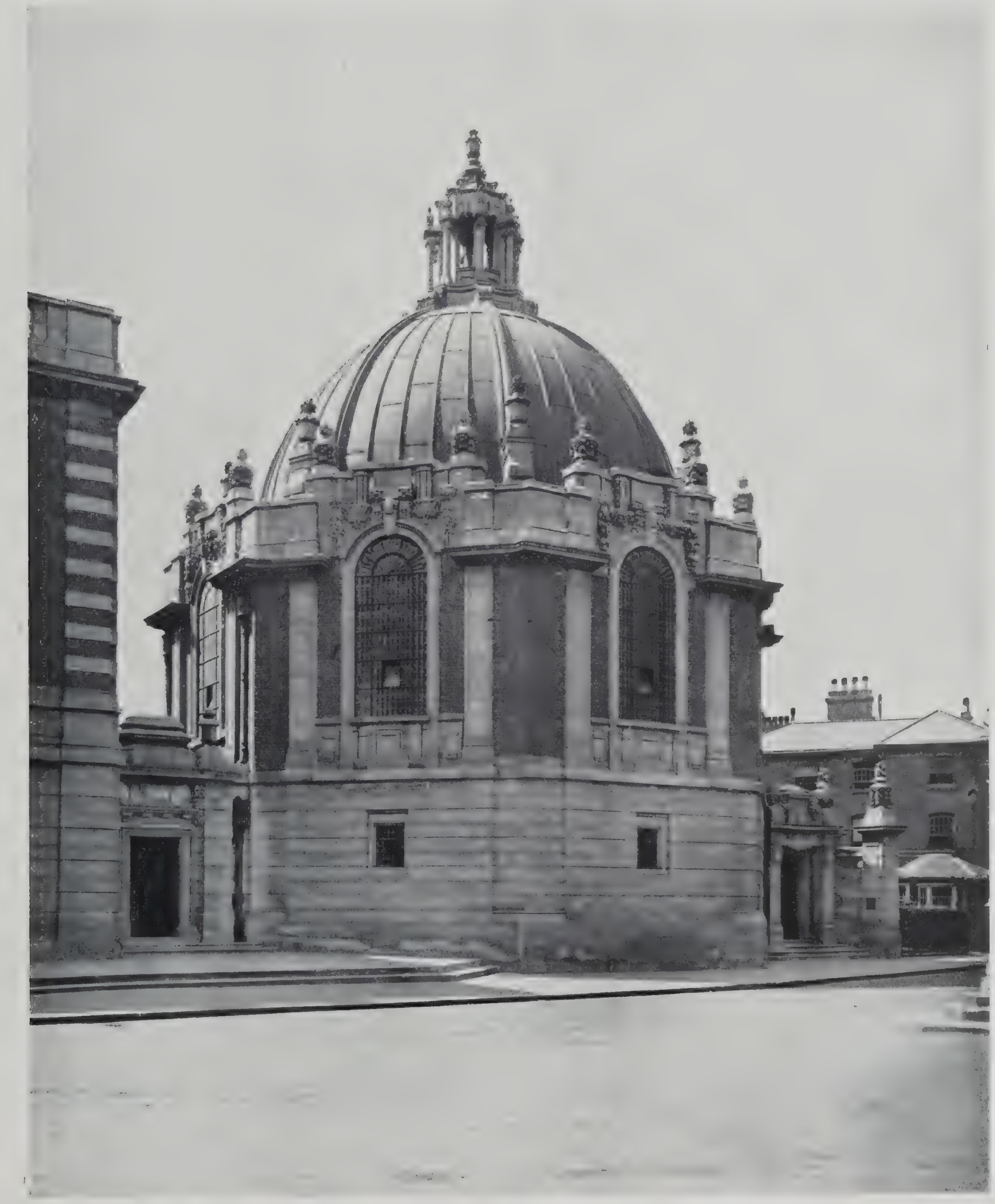
THE ETON MEMORIAL.

This memorial, comprising a large hall and a library with museum adjoining, has been erected on an irregular site opposite the College, in memory of those Etonians who took part in the South African War.

The school hall is approached from the street through a low-vaulted crush hall, divided into bays by coupled Ionic columns, and having four wall-niches filled with bronze figures (modelled by Mr. Arthur Broadbent) representing manly virtues. Including the gallery at the east end (over the crush hall), and the platform at the west end, the school hall is 142 ft. long, the width being 53 ft. and the height 44 ft. to the crown of the barrel ceiling. The body of the hall is divided into bays by coupled Corinthian columns, with a circular-headed window arranged in each bay, and at the east end is an oak screen erected to the memory of Miss Jane Evans, whose portrait by Sargent hangs on it.

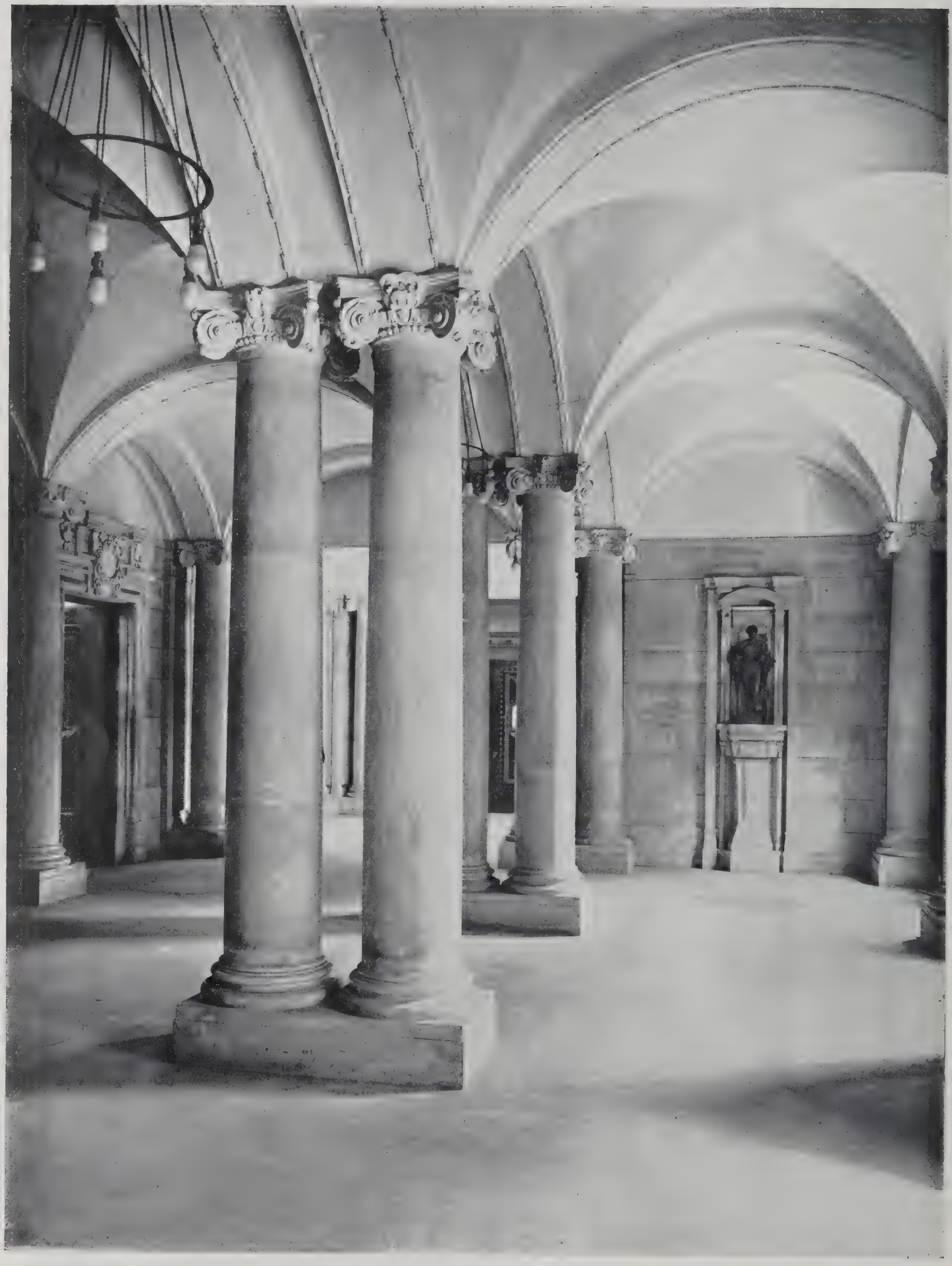
The platform end and side walls of the hall are at present unfinished, the intention being that each bay shall be panelled in oak up to the level of the stone window-sill. The central bay on the south side, which contains the first stone, is to record on its panels the names and regiments of the 129 boys to whom the buildings are a memorial.

Above the ambulatory at the back of the platform, and



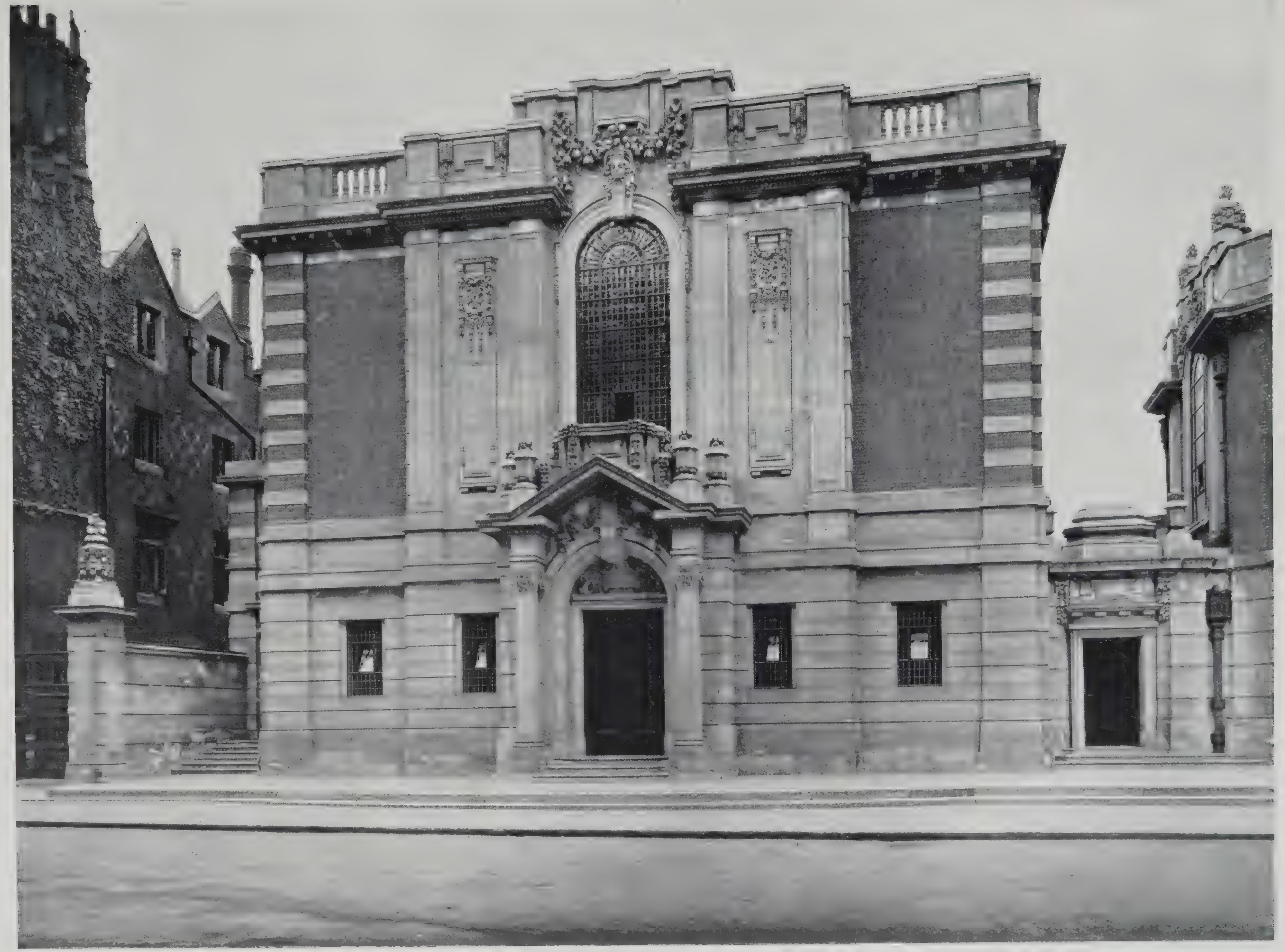
THE ETON MEMORIAL: EXTERIOR OF LIBRARY.

LAURENCE K. HALL, F.R.I.B.A., AND SIDNEY K. GREENSLADE, A.R.I.B.A., ARCHITECTS.



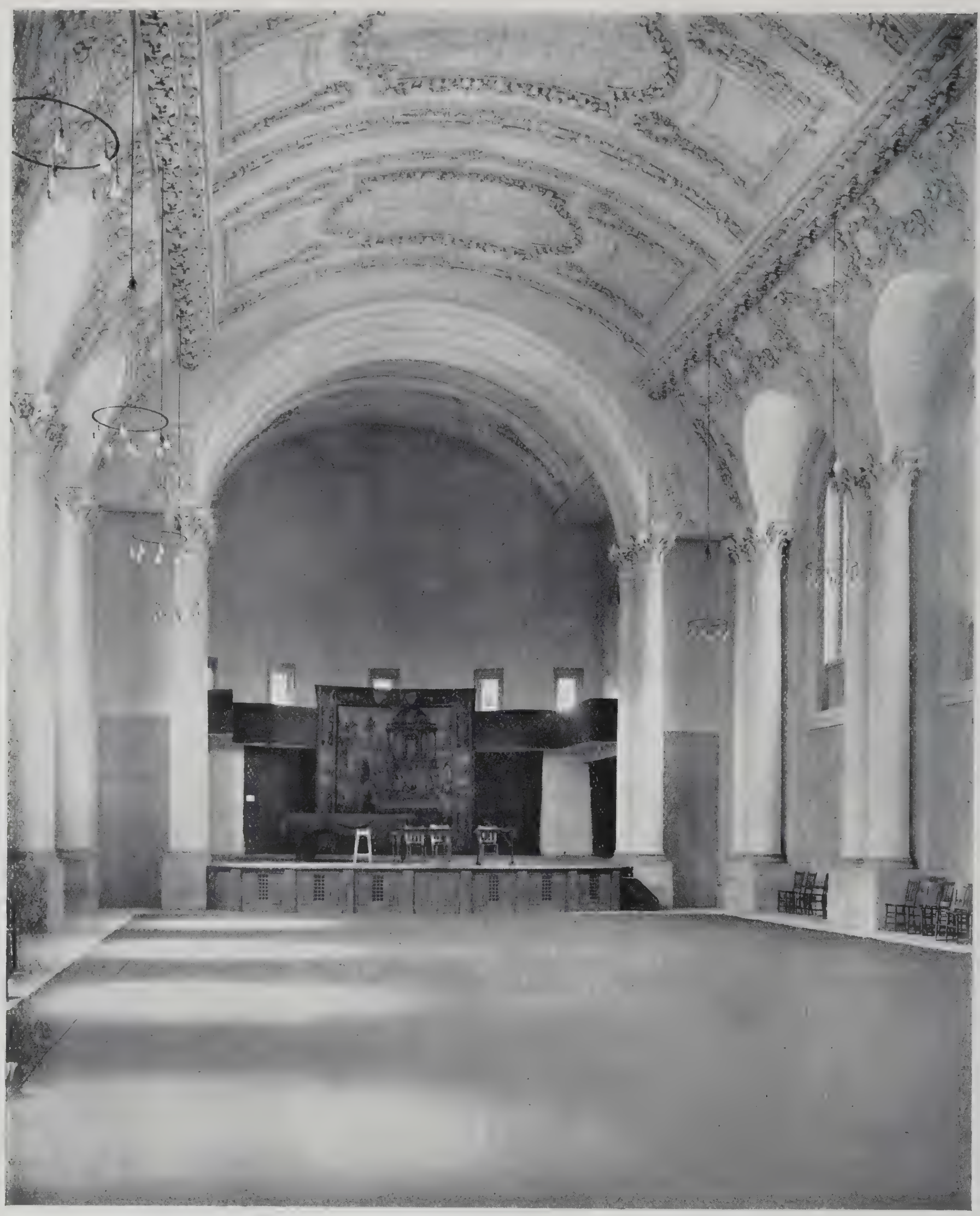
THE ETON MEMORIAL: CRUSH HALL.

LAURENCE K. HALL, F.R.I.B.A., AND SIDNEY K. GREENSLADE, A.R.I.B.A., ARCHITECTS.



THE ETON MEMORIAL: EXTERIOR OF SCHOOL HALL.

LAURENCE K. HALL, F.R.I.B.A., AND SIDNEY K. GREENSLADE, A.R.I.B.A., ARCHITECTS.



THE ETON MEMORIAL: INTERIOR OF SCHOOL HALL LOOKING TOWARDS STAGE.

LAURENCE K. HALL F.R.I.B.A., AND SIDNEY K. GREENSLADE, A.R.I.B.A., ARCHITECTS.

filling also the side recesses, it is hoped to have an organ, with movable choir and orchestra seats in front of it.

To the right of the crush hall is the octagonal library. It is also entered from the vaulted cloister which encompasses the three northern sides of the octagon, and opens on to a lobby from which access is also obtained to the curator's room and to the classical museum.

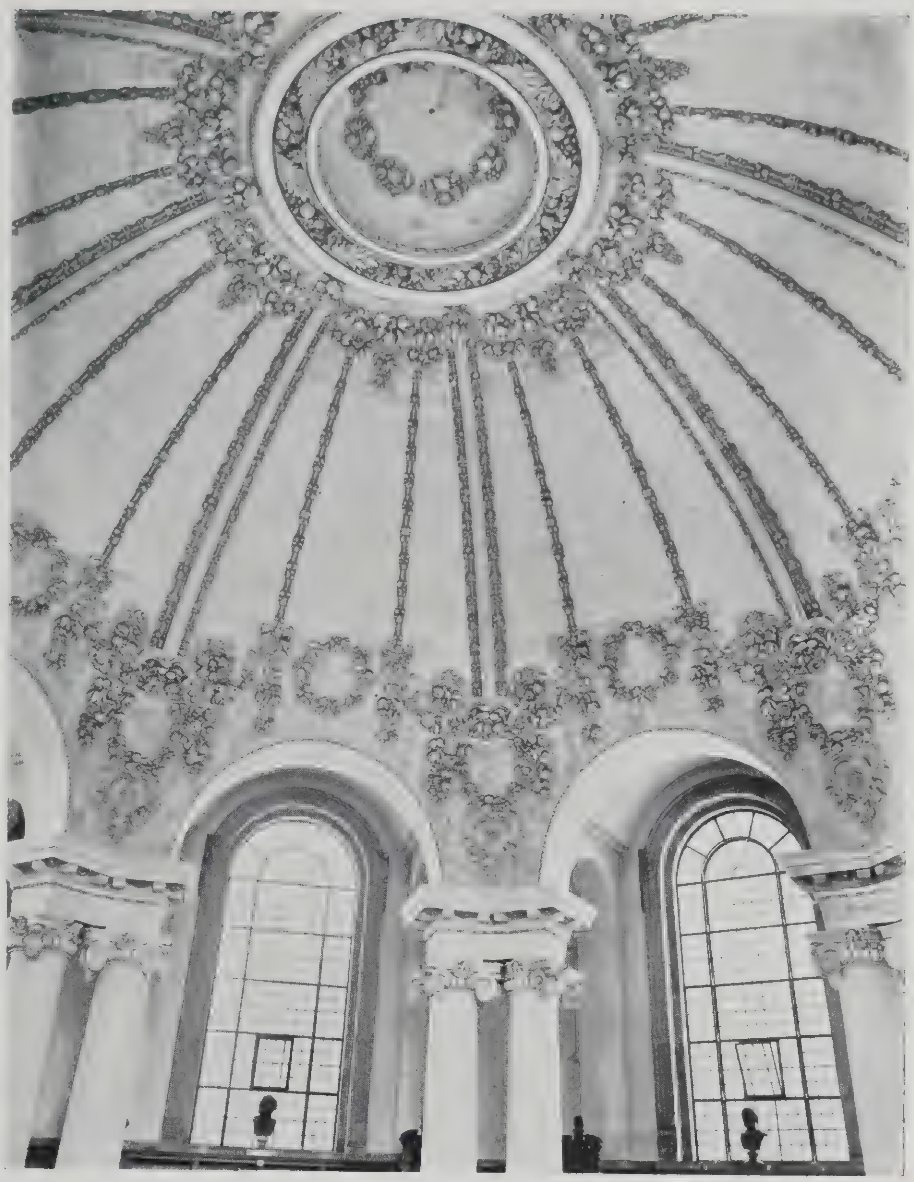
The school library measures 54 ft. across the octagon, and has a domed central area of 37 ft. The total internal height is 50 ft. The dome, which is carried on eight pairs of coupled Ionic columns, is of steel construction; to the inner dome is suspended an enriched cast fibrous plaster ceiling, modelled by Mr. Arthur Broadbent from designs by and under the personal supervision of the architects. Round the room behind these columns runs a gallery at a height of 10 ft. above the floor. The room is lighted by eight large circular-headed windows over the gallery and by five small windows below, the dome being unpierced. The light is more than ample, and has satisfactorily proved the wisdom of not interfering with the dome ceiling.

There is accommodation for about sixty readers at tables. The circular oak table occupying the centre of the room, together with its rich bronze electric standards, forms the memorial "given by his pupils in remembrance of Herbert Francis William Tatham."

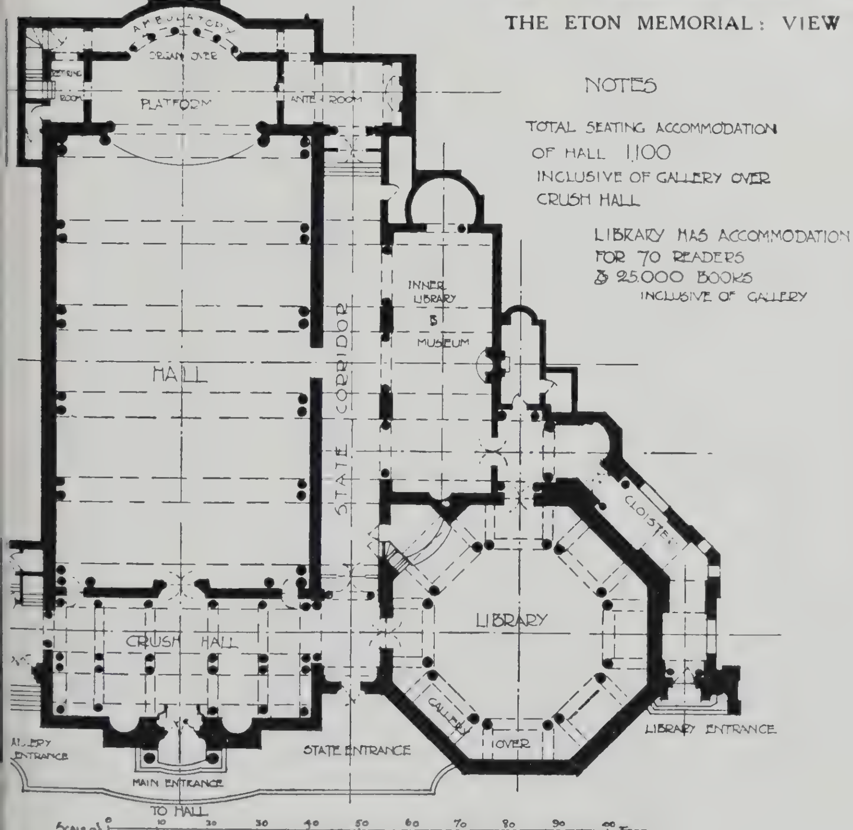
At the back of the library, and opening off the 10 ft. wide corridor that runs along the north side of the school hall, is the classical museum. This is 52 ft. long and 20 ft. wide, and has at one end a circular recess in which has been placed Mr. Pinker's bust of Dr. Warre. The room may used as an additional reading-room connection with the library. A onumental fireplace in Portland stone cupies the centre of the north wall mediately facing the central bay of e school hall.

The stonework used in the construc- n of the buildings throughout came m the Portland stone quarries of the ath Stone Firms, and the whole of it s worked in the G.W.R. goods yard Windsor. Externally it is used in njunction with a purple-grey Luton ick. The roofs are covered with elabole slates and milled lead, with e exception of the dome, which has st lead. The open cupola capping e dome is also covered with cast d, while the vases both on dome and pola are of the same material. The ofs are of steel construction with oden common rafters, boarded. The lumns in the hall and the library ke the bulk of the weight of the ofs; they consist of steel stanchions cased in concrete, and are finished th Keene's cement. The window- mes are of rolled steel, the sections t built up in the usual manner, but lled in one. The leaded glazing is rried out in "silver white" glass. e main doors throughout are covered th acid-free oxhide, well padded and cured to the frame by square and cular-headed bronze nails.

The general contractors were Messrs. nry Willcock and Co., of Wolver- mpton; their contract for the shell the buildings amounted to £37,000, d it was completed without that sum ng exceeded. In addition, a con- erable amount has already been nt on fittings, etc. Many generous gifts have been made, but a very great deal still remains to be done.



THE ETON MEMORIAL: VIEW OF LIBRARY CEILING FROM BALCONY LEVEL.


AMBULATORY
ORGAN OVER
RETIRING ROOM
PLATFORM
ANTE ROOM
NOTES
TOTAL SEATING ACCOMMODATION OF HALL 1,100 INCLUSIVE OF GALLERY OVER CRUSH HALL
LIBRARY HAS ACCOMMODATION FOR 70 READERS & 25,000 BOOKS INCLUSIVE OF GALLERY
INNER LIBRARY & MUSEUM
HALL
STATE CORRIDOR
CLOISTER
LIBRARY
CRUSH HALL
GALLERY OVER
ALLERY ENTRANCE
STATE ENTRANCE
LIBRARY ENTRANCE
MAIN ENTRANCE TO HALL
Scale of 0 10 20 30 40 50 60 70 80 90 100 FEET

THE ETON MEMORIAL: GROUND-FLOOR PLAN.

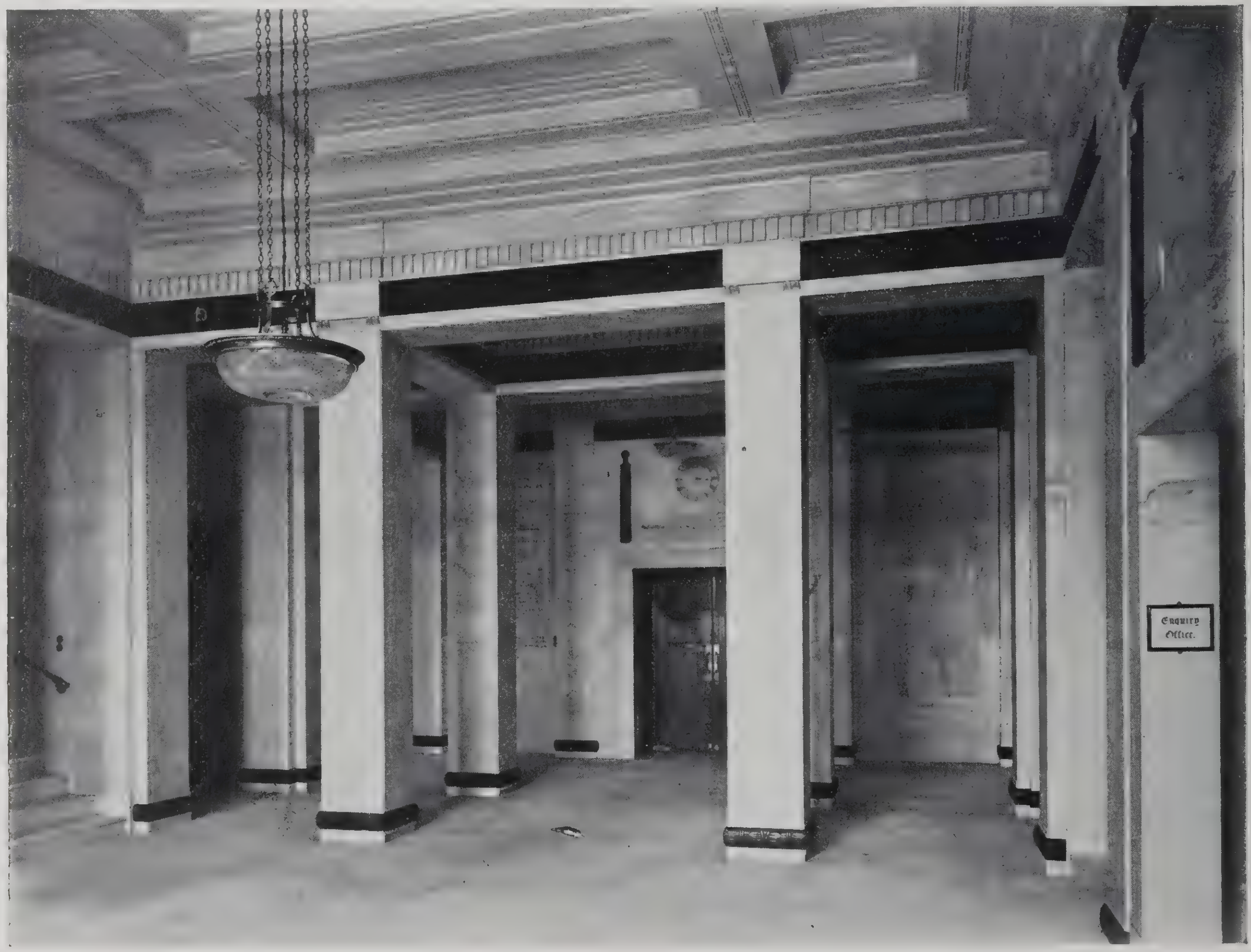
The architects are Messrs. L. K. Hall, F.R.I.B.A., and S. K. Greenslade, A.R.I.B.A., of Westminster.

The steelwork was executed by Messrs. Matthew Shaw and Co., London; steel frames and casements by Messrs. Henry Hope and Sons, Ltd., Birmingham; lead glazing by Messrs. Lowndes and Drury, London; cast-lead vases by Messrs. J. W. Singer and Sons, Frome, and Messrs. Thomas Elsley, Ltd., of London; all interior woodwork in library by Messrs. J. and A. Ogilvie, Aberdeen; all woodwork in great hall, and circular table in library, by Mr. Herbert Read, Exeter; iron grilles, Messrs. J. W. Singer and Sons, Ltd.; lead rainwater heads and pipes, Messrs. Thomas Elsley, Ltd.; stone carving and plaster ceilings by Mr. Arthur Broadbent, whose design was selected in competition some time ago. As will be seen from the accompanying plan, the site was an awkward one to deal with, but the architects have adapted the buildings to it in a very ingenious manner, and have secured a most satisfactory result. The general grouping is pleasing, the outline of the dome over the library especially so, and there is evidence of culture throughout, both in the main scheme and in the details of it.

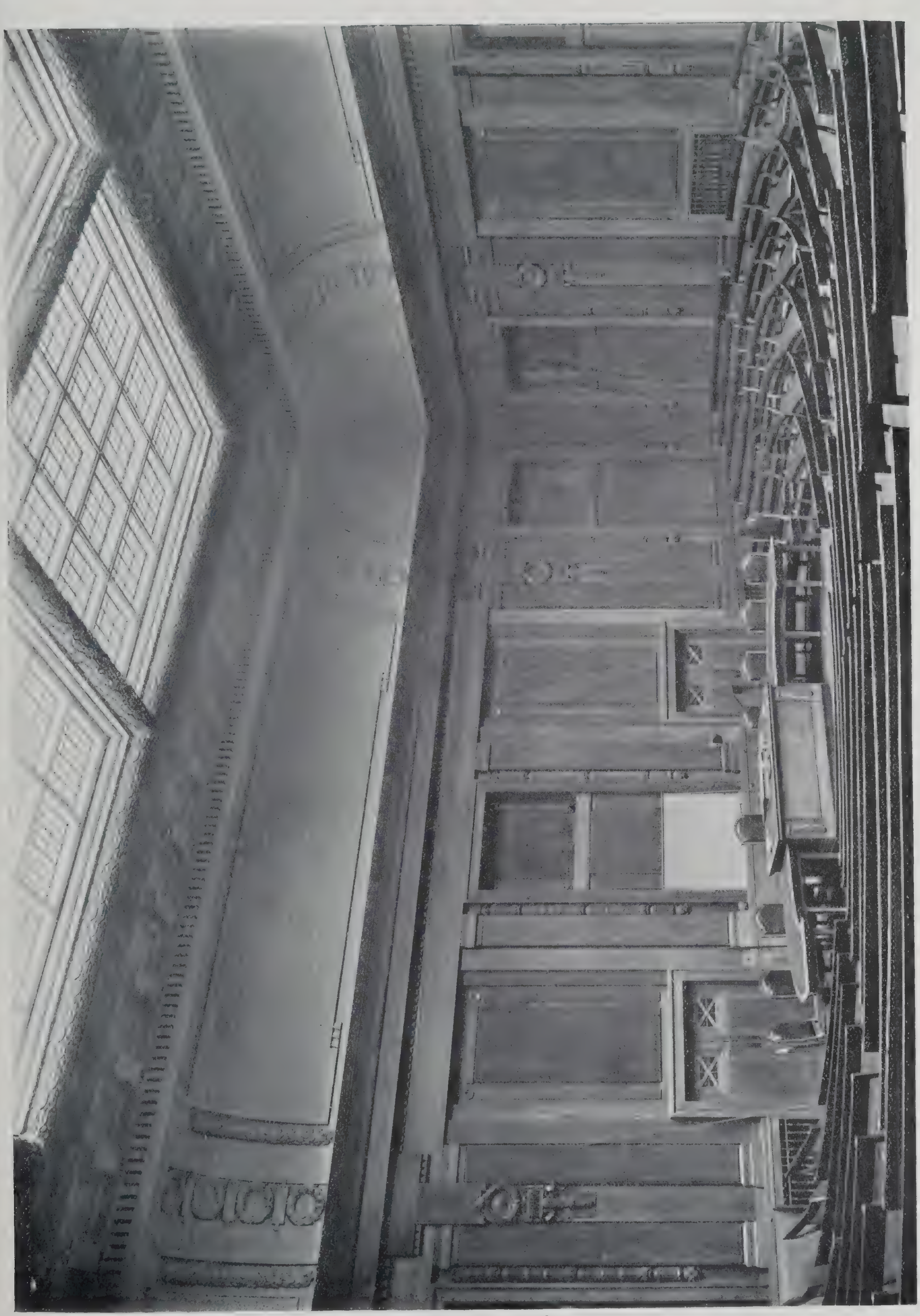
THE INSTITUTION OF ELECTRICAL ENGINEERS.

The Institution of Electrical Engineers has recently established itself in a home of its own on the Embankment—in the building at the foot of Savoy Street which was originally the Medical Examination Hall of the Royal College of Physicians and the Royal College of Surgeons—where some most interesting work has been carried out from designs by Messrs. H. Percy Adams, F.R.I.B.A., and Charles Holden, A.R.I.B.A., architects, of London, W.C.

The entrance hall, with its corridors, has been entirely remodelled, the original central staircase having been replaced by flights to right and left. It is lined throughout—floor and walls—with white Pentelikon marble, and presents a very refined effect, relief being given by solid bronze friezes and column bases, which were modelled by Mr. Pibworth and executed by Messrs. Thos. Brawn and Co., of Birmingham. On either side of the entrance doorway are cloak-rooms, very ingeniously arranged, the space, instead of presenting the usual unsightly appearance, being enclosed by folding mahogany doors in keeping architecturally with the rest of the hall. To the right and left are arranged offices, committee-rooms, common-room, and council-room, and at the rear is the lecture-hall, 60 ft. square, which, while occupying much the same space as the former theatre, is to all intents and purposes a new apartment. It is a remarkable room in many ways, but chiefly on account of its woodwork. This is entirely of Cuba mahogany left untouched, with great carved drops between the panels, and cartouches bearing the names of great men associated with electrical science and invention—Faraday, Volta, Ohm, Ampère, Kelvin, Hopkinson, Maxwell, and Henry—the whole effect being one of force, almost barbaric in character. The carving was executed by Mr. W. S. Frith, of Chelsea, who was also responsible for the bold enrichment in fibrous plaster which surrounds the great top-light over the lecture-hall and the enrichment on the cove above the panelling. The room is seated for 420 persons, with space for fifty more if required. The mahogany was supplied by Messrs. Wm. Oliver and Son. At the lower level is the president's table, with a screen at the back that can be raised or lowered by a concealed wire rope from the lantern-room, which is arranged above the main entrance to the hall, and is entered by a ladder enclosed in a recess at one side of the doorway. Fixed in the cornice are eleven large diagram blinds (of canvas dyed to harmonise with the panelling), which, by concealed gear, can be lowered as required. The blinds carry battens, on which diagrams can be pinned, and give a total length of 120 ft. with a height of 15 ft. These blinds, with their lowering and raising gear, as well as that for the lantern screen, were supplied by Mr. Albert J. Shingleton, of 118, Kensington High Street, W. The furniture in the lecture-hall is by Messrs. Hampton and Sons, and that in the other rooms by Messrs. Shoolbred and Co. The artificial lighting of the apartment is by Osram lamps concealed in the cornice, which include red and yellow lamps to neutralise the four Westinghouse Silica lamps employed as laylights. Over the ceiling central light is a false roof enclosing a fan that extracts the vitiated air, fresh air being admitted over radiators in the panelling covered by brass grilles.



INSTITUTION OF ELECTRICAL ENGINEERS, VICTORIA EMBANKMENT, LONDON.
H. PERCY ADAMS, F.R.I.B.A., AND CHARLES HOLDEN, A.R.I.B.A., ARCHITECTS.



INSTITUTION OF ELECTRICAL ENGINEERS, VICTORIA EMBANKMENT, LONDON: THE LECTURE HALL.

H. PERCY ADAMS, F.R.I.B.A., AND CHARLES HOLDEN, A.R.I.B.A., ARCHITECTS.

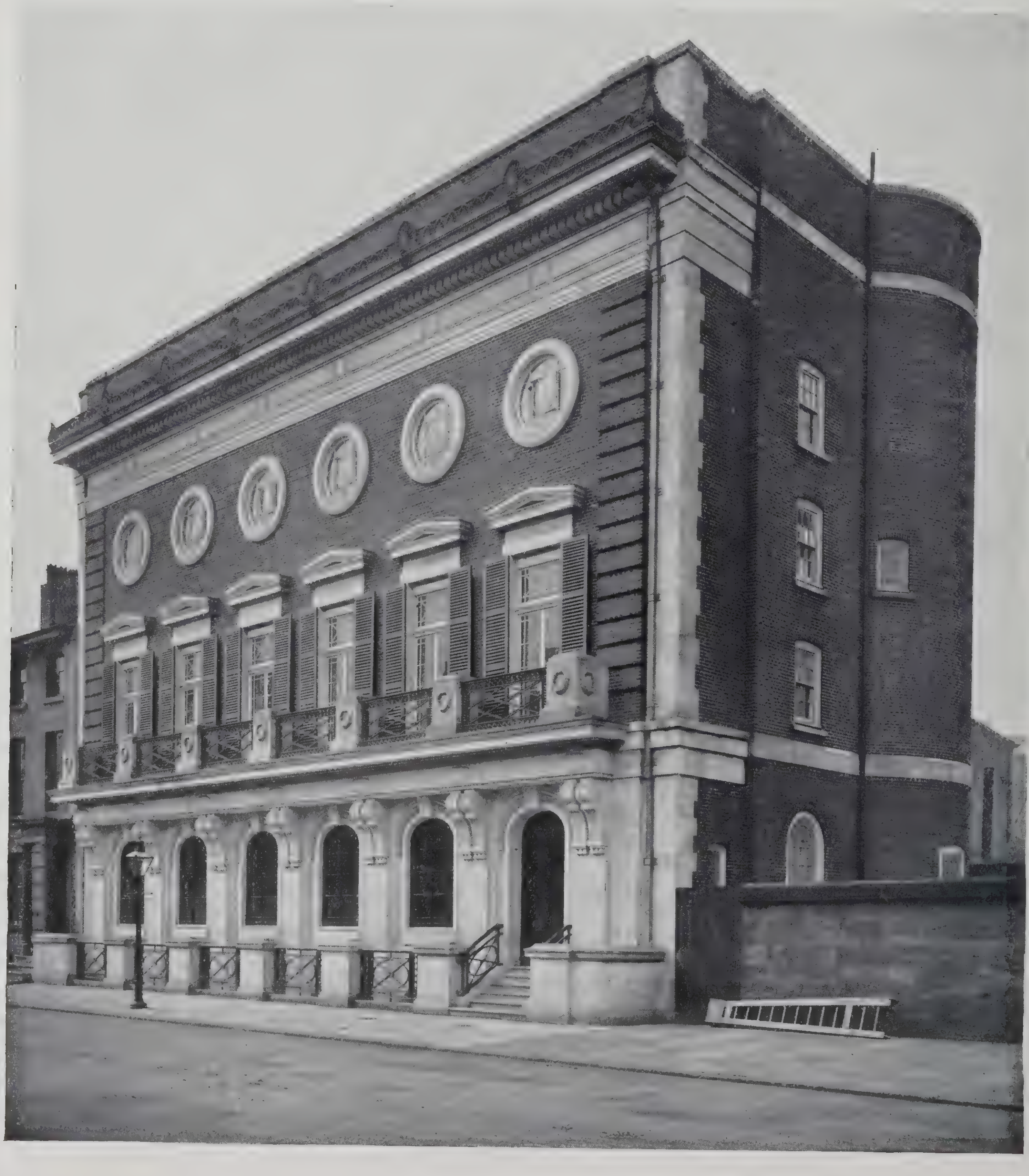
The common-room to the left of the entrance-hall is comfortably furnished, and, being intended for use as a refreshment-room on occasions, has a Waygood push-button service lift from the basement, in which are the kitchens and a " boiling-room " fitted with six electric tea and coffee urns by the General Electric Co., Ltd. In the basement, too, are new lavatories, the sanitary fittings for which were supplied by Messrs. Doulton and Co., Ltd. The push-button lift in the common-room also serves t library—a long room on the first floor, facing the Embar ment.

The electric-light fittings were supplied by Mess F. and C. Osler, Ltd., the electric wiring having be carried out by Messrs. Drake and Gorham, Ltd., mainly the Kalkos system. The general contractors for t alterations were Messrs. Prestige and Co., of London, S.W

THE STUDENTS' UNION, LIVERPOOL.

This new building, recently completed, is the first portion of a larger scheme, and provides a club-house for the men students at the University of Liverpool. A similar club-house for women students, with a debating theatre centrally placed between the two portions, will complete the scheme.

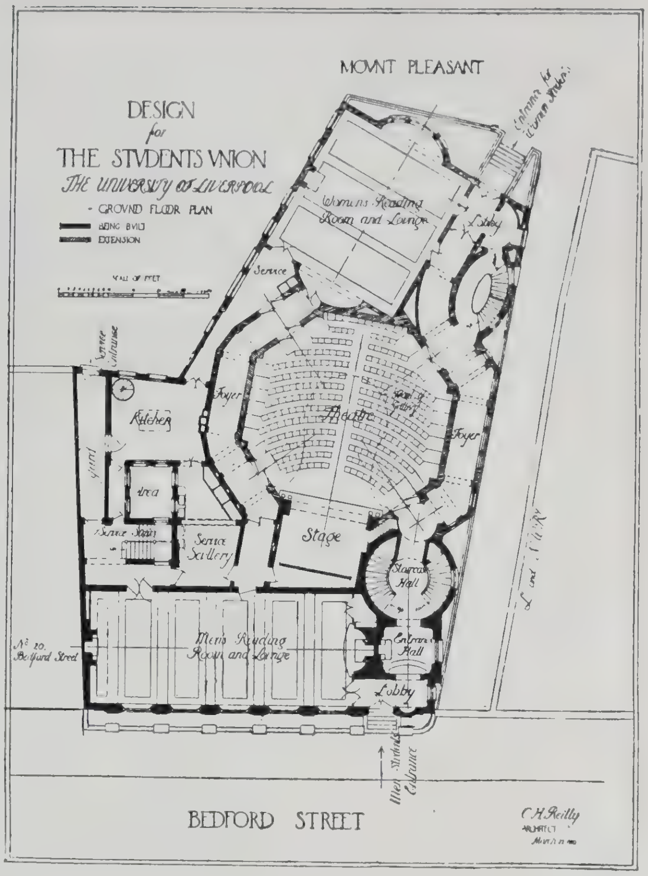
In the men's portion the chief accommodation is as follow On the lower ground floor a large billiard-room, on t ground floor a reading-room, on the first floor a dinin room, and on the second floor a library; together wi small rooms for committee purposes.

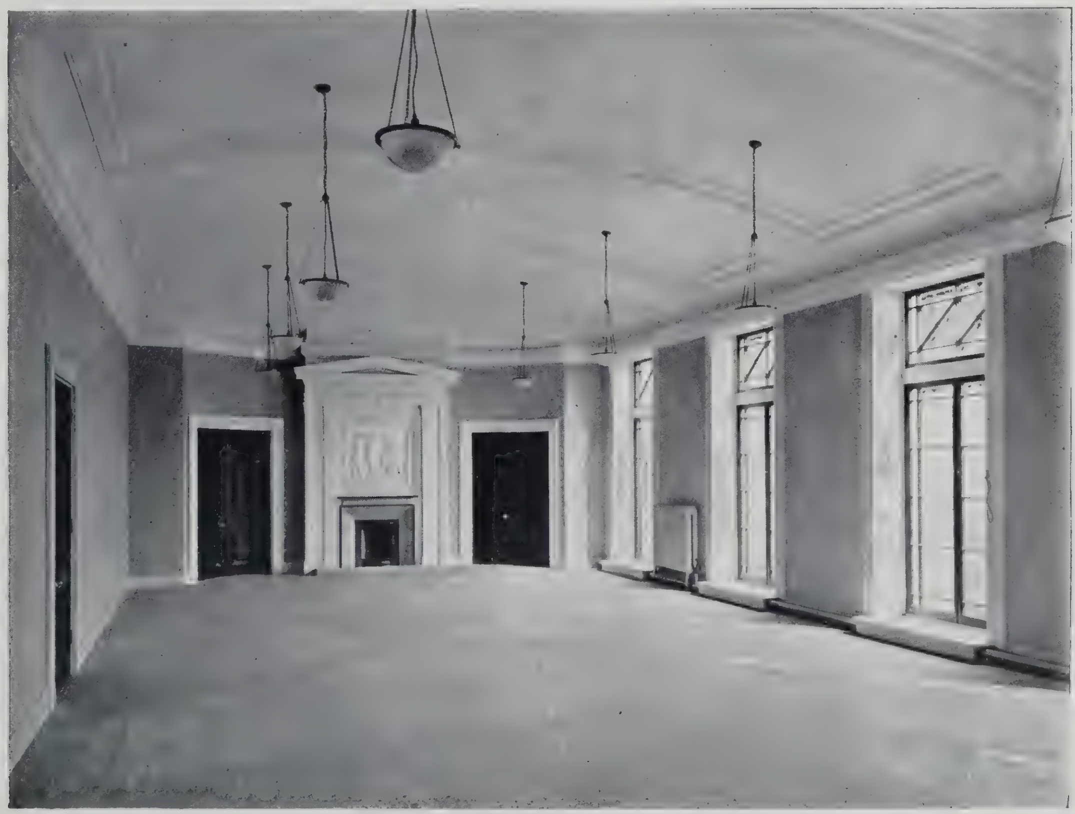


THE STUDENTS' UNION, LIVERPOOL: FACADE TO BEDFORD STREET.
PROFESSOR C. H. REILLY, M.A., A.R.I.B.A., ARCHITECT.

. special feature of the façade is the brickwork, which sists of the ordinary stock brick of the Liverpool district -cut on the face and made to work five courses to the . The joints are ⅜ in. wide in mortar made with ground ie. The wire-cutting of these common Liverpool bricks rid of the extremes of colour (pink and white) and duces a pleasant texture and variety of tone. For the er portion of the building and for the balcony piers, dow-heads and cornice, Portland stone (supplied by F. J. Barnes, of Portland) has been used, and this, the painted shutters, cast-iron railings and lamp dards, and terra-cotta enrichment to the cornice, ires a very effective result. At the time the accomying photograph of the façade was taken, it should be lained, the lamp standards had not been placed in tion. They are Classic in spirit, like the rest of the k, and are fixed on the piers provided for them.

rofessor C. H. Reilly, M.A., A.R.I.B.A., of the School Architecture, Liverpool University, was the architect the building. The general contractors were Messrs. wn and Backhouse, of Liverpool. Floors and stairs, ire-resisting reinforced concrete, were constructed by srs. Stuart's Granolithic Company, London; cast-iron dards, balcony fronts, staircase balustrade, cressets, by Messrs. Walter Macfarlane and Co., Glasgow; ton Wood chimney-pieces by Messrs. The Hopton od Stone Firms, Ltd.; terra-cotta cornice enrichment Messrs. Doulton and Co., Ltd., London; lead downs and rainwater heads, Messrs. Henry Hope and Sons, ningham; plasterwork, Messrs. John Tanner and Son, don and Liverpool; casements, Messrs. Wenham and ers; grates, Messrs. Robbins's "Fire-on-the-Hearth"; tary fittings, Messrs. Musgrave and Co.; electric ng, Messrs. John Hunter and Co., Liverpool; electric- fixtures, glass door-knobs, and grates, Mr. E. larke, Liverpool; heating and ventilating and cooking t, Messrs. Killick and Cochrane, Liverpool; sized polished cork carpet laid direct on concrete floors, srs. J. and R. Smith, Liverpool; bricks ("Ravenhead Rustic Face"), Mr. Middlehurst, Sutton; asphalt, Messrs. The Trinidad Lake Asphalt Company; slates, Tilberthwaite.





THE STUDENTS' UNION, LIVERPOOL: MEN'S DINING-ROOM, FIRST FLOOR.

PROFESSOR C. H. REILLY, M.A., A.R.I.B.A., ARCHITECT

NORTHERN CONSERVATIVE AND UNIONIST CLUB, NEWCASTLE-UPON-TYNE.

This club-house, recently completed from designs by Messrs. Cackett and Burns-Dick, FF.R.I.B.A., of Newcastle, occupies a site adjoining the old premises, which had become out of date and unsuitable for the expanding membership and more vigorous policy now pursued by the club authorities (prominent amongst whom is Sir Walter Plummer, who is largely responsible for the thoroughness with which the scheme has been carried through), resulting in one of the most complete and best-equipped club buildings in the provinces.

The fine open position, with Hood Street opposite, disclosing a view of the façade from Grey Street, makes possible a proper estimate of the design—a possibility too seldom the case in ordinary town streets.

Unfortunately the shape of the site is hardly ideal, and the narrowness of the frontage to Pilgrim Street creates from the outside an erroneous impression of the extent of the accommodation. The accompanying plans will give some idea of this, and of the difficulties to be overcome, chief of which were the absence of any access to the site except from Pilgrim Street, and the great depth without light from either side. The former explains the somewhat unusual treatment of the lower storeys, which are so designed as to secure the necessary service and fuel entrance without disfigurement to the front. In thus fulfilling a requisite purpose, interest is lent to the elevation, and a useful and appropriate balcony opening out of the first-floor rooms is made possible. How the lighting difficulty has been surmounted can be seen from the plans, the actual result being completely satisfactory.

The ground floor comprises a good entrance hall, reception-room, and large smoking-room, with ample cloak and lavatory accommodation, the staircase and passenger lift being about midway between the front and rear apartments; while on the first floor, which may be considered the principal floor, are reading and private dining rooms, and the most important room in the building—the dining-hall, about 64 ft. long by 27 ft. wide, and lofty enough to provid mezzanine floor with balcony overlooking the room.

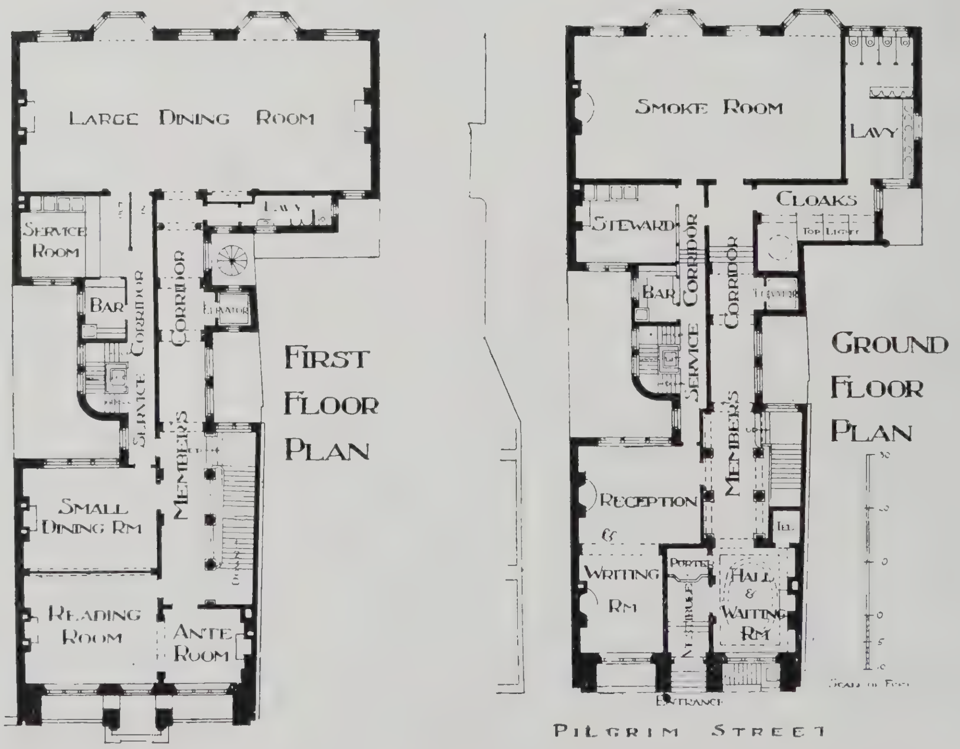
The second floor consists of two billiard-rooms (th tables), card-rooms, etc., and on the third and fourth flo are ten bedrooms for members, with bathroom acco modation, servants' bedrooms, etc.

The lower ground or basement floor is efficiently equip with cooking and heating appliances, and has administrat and staff apartments of a very complete character. special feature of the planning is the way in which service arrangements on the principal floors are contri so as to avoid contact with the members' corridors, whi affording the most speedy and effective service to club-rooms.

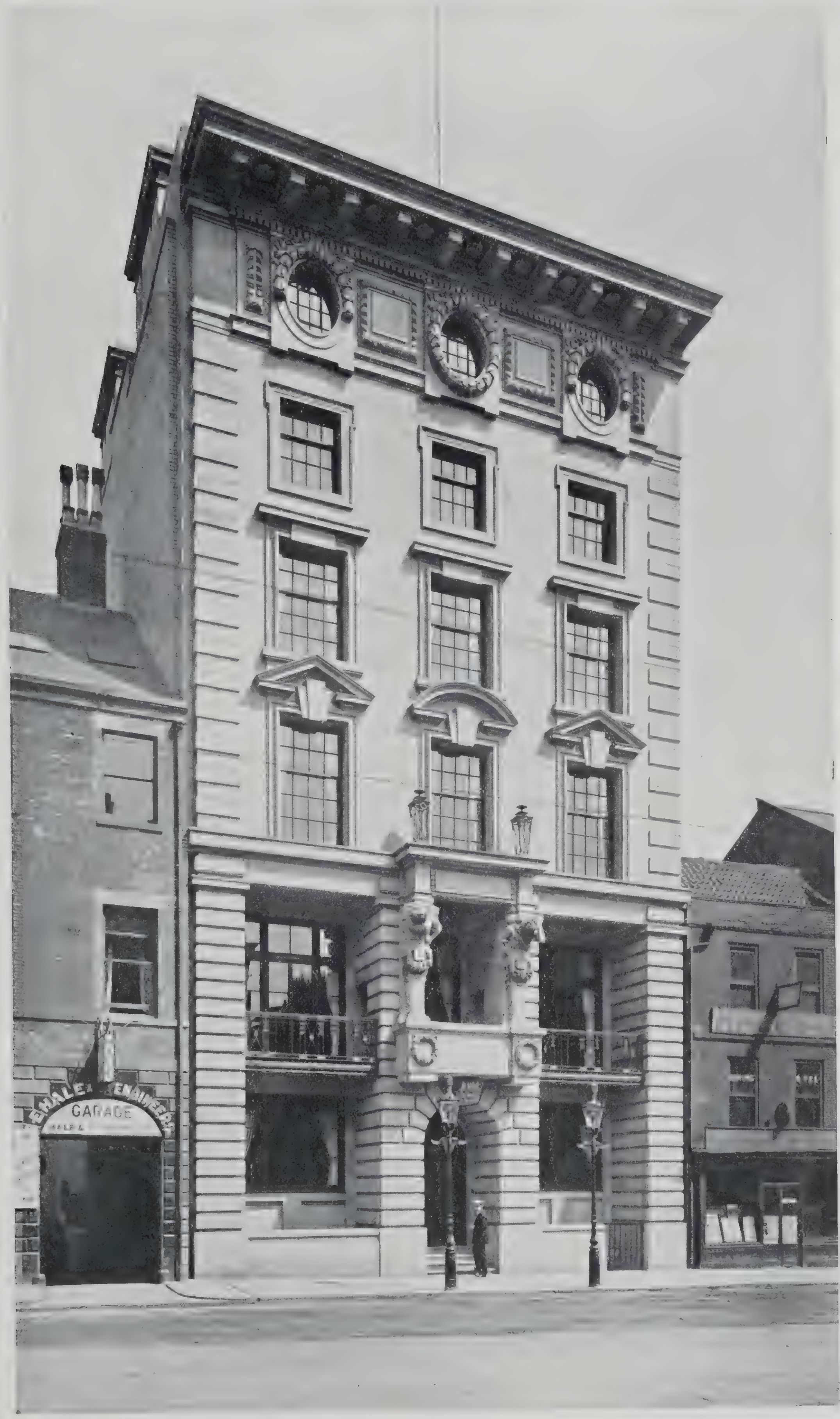
The building is substantially constructed, fire-resisti throughout (all floors being of concrete with Expand Metal), and finished in a quiet club-like manner in app priate material, such as is found in the solid, dignified w of the designers of the Georgian period.

The general contractors were Messrs. Stephen East Ltd., of Newcastle. The marble-work was executed Messrs. Emley and Sons, of Newcastle; the sanitary fitti are by Messrs. Shanks and Co., of Barrhead; electric-li fittings by Messrs. Singer and Sons, of Frome; lifts Messrs. R. Waygood and Co., Ltd., of London; furnishi by Robson and Sons, Ltd., of Newcastle; and heat boilers by the National Radiator Co., of London, wh among other sub-contractors were the following:—

Sculpture work and balcony railing on front elevation, the Bro grove Guild, Bromsgrove; partitions, the Hempstead Brick (Hemel Hempstead; sanitary work, electric wiring, and heat and ventilation, R. W. Cairns, Newcastle; iron balustrading main staircase and electric-light fittings, Spital and Clark, mingham; door furniture, N. F. Ramsay and Co., Newcast cooking machinery, R. and A. Main, Ltd., Glasgow; asphalt ro Le Brea Co.; painting, decoration, and glass, G. Laidler, N castle; furnishings, Jas. Coxon and Co., W. E. Harker and (and Messrs. Gullachsen, Newcastle; lightning conductors, P. T and Co., Newcastle.

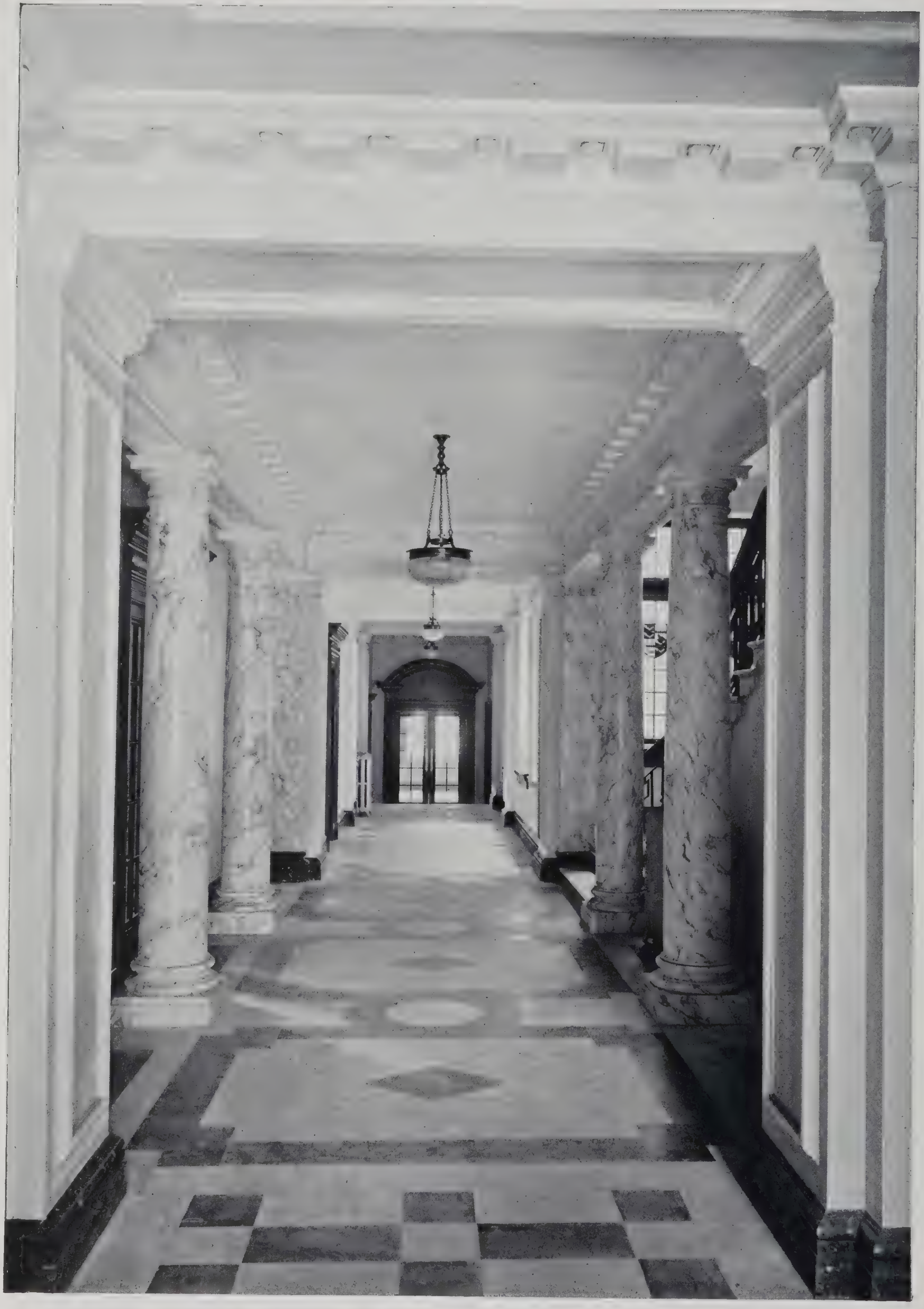


NORTHERN CONSERVATIVE AND UNIONIST CLUB, NEWCASTLE-UPON-TYNE.
CACKETT AND BURNS-DICK, FF.R.I.B.A., ARCHITECTS.



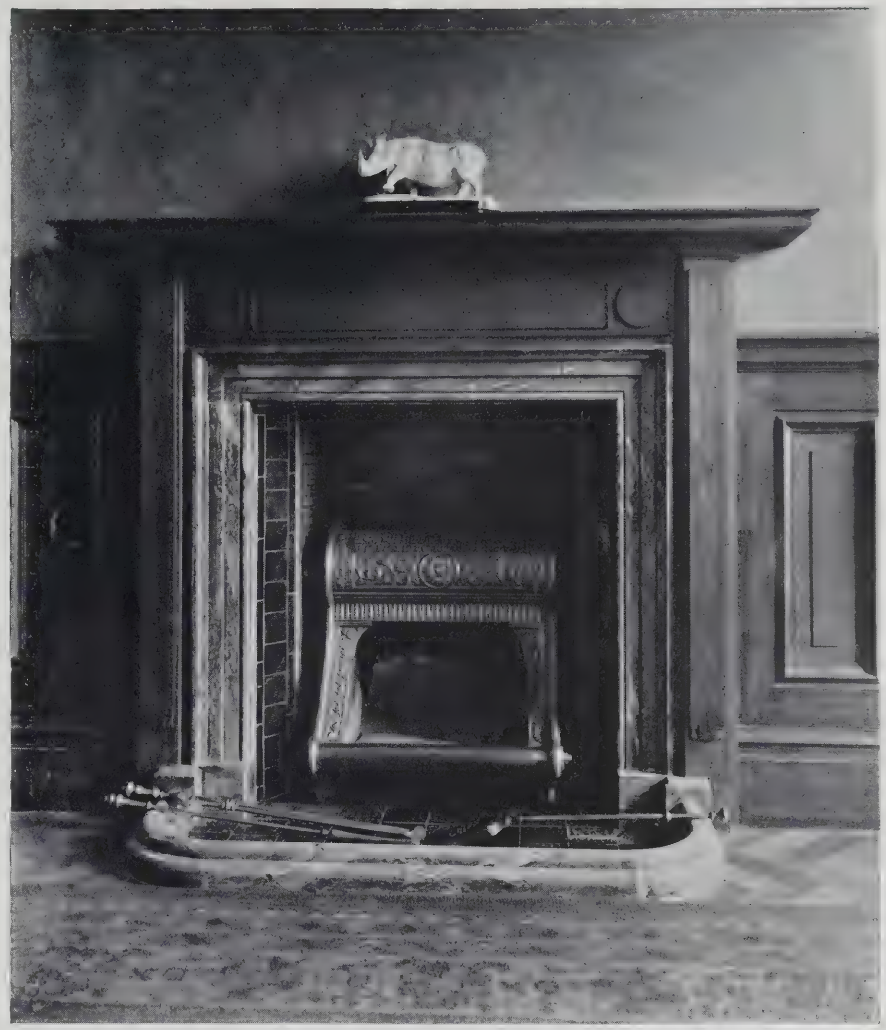
NORTHERN CONSERVATIVE AND UNIONIST CLUB, PILGRIM STREET, NEWCASTLE-UPON-TYNE.

CACKETT AND BURNS-DICK, FF.R.I.B.A., ARCHITECTS.



NORTHERN CONSERVATIVE AND UNIONIST CLUB, NEWCASTLE-UPON-TYNE: MAIN CORRIDOR.
CACKETT AND BURNS-DICK, FF.R.I.B.A., ARCHITECTS.

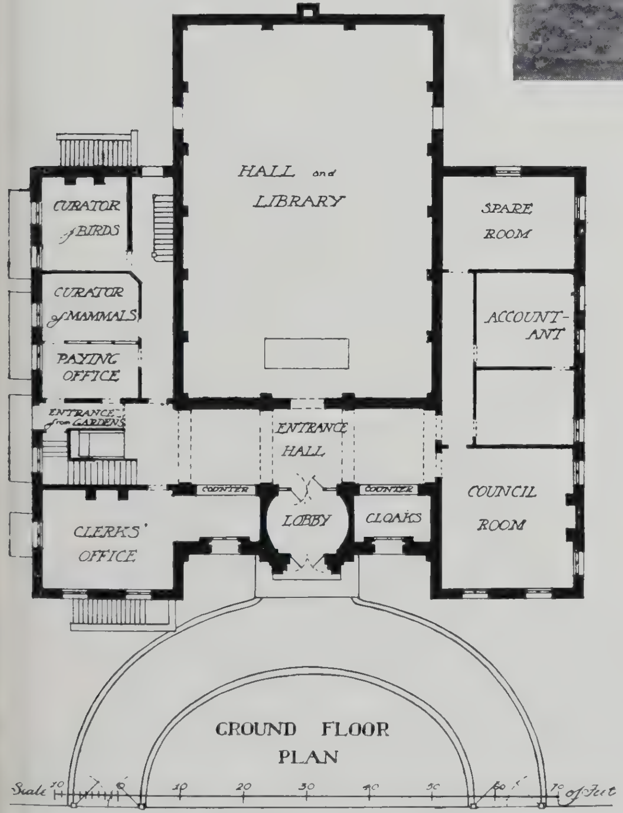
NEW PREMISES FOR THE ZOOLOGICAL SOCIETY, REGENT'S PARK, LONDON.



CHIMNEYPIECE IN COUNCIL ROOM.

During the past year there has been mpleted on the north side of Regent's ark, London, a new building for the oological Society, the architects of which ere Messrs. John Belcher, R.A., and J. . Joass, F.R.I.B.A. The accompanying lan shows the arrangement on the round floor. It will be seen that the main trance leads through a circular lobby to a commodious entrance hall, to the ft of which is the Society's office, with ain staircase adjoining; while on the ght-hand side is the council room. At e rear of the entrance hall, and axially line with the entrance, is the hall and brary, an apartment measuring about 60 . by 40 ft., and carried up the full height the building. On either side are curator's oms on the ground floor, and spare oms, lavatories, etc., above, the front of e building at first-floor level being apporoned to rooms in connection with the brary, and offices for the librarian and e secretary; while on the top floor are rovided the residence of the secretary r. P. Chalmers Mitchell) and quarters r the caretaker.

The meeting hall and library has a barrel iling, with sky-lights, its walls being chitecturally treated with pilasters. anges of bookshelves fill the spaces tween the latter on all four sides. t first-floor level is an open gallery rried on steel bearers. A dais with ble and chairs (designed by the archicts) is placed at the entrance end of the room, backed by a panelled screen, and suitable seating accommodation is provided to right and left; the whole of the woodwork being of oak.

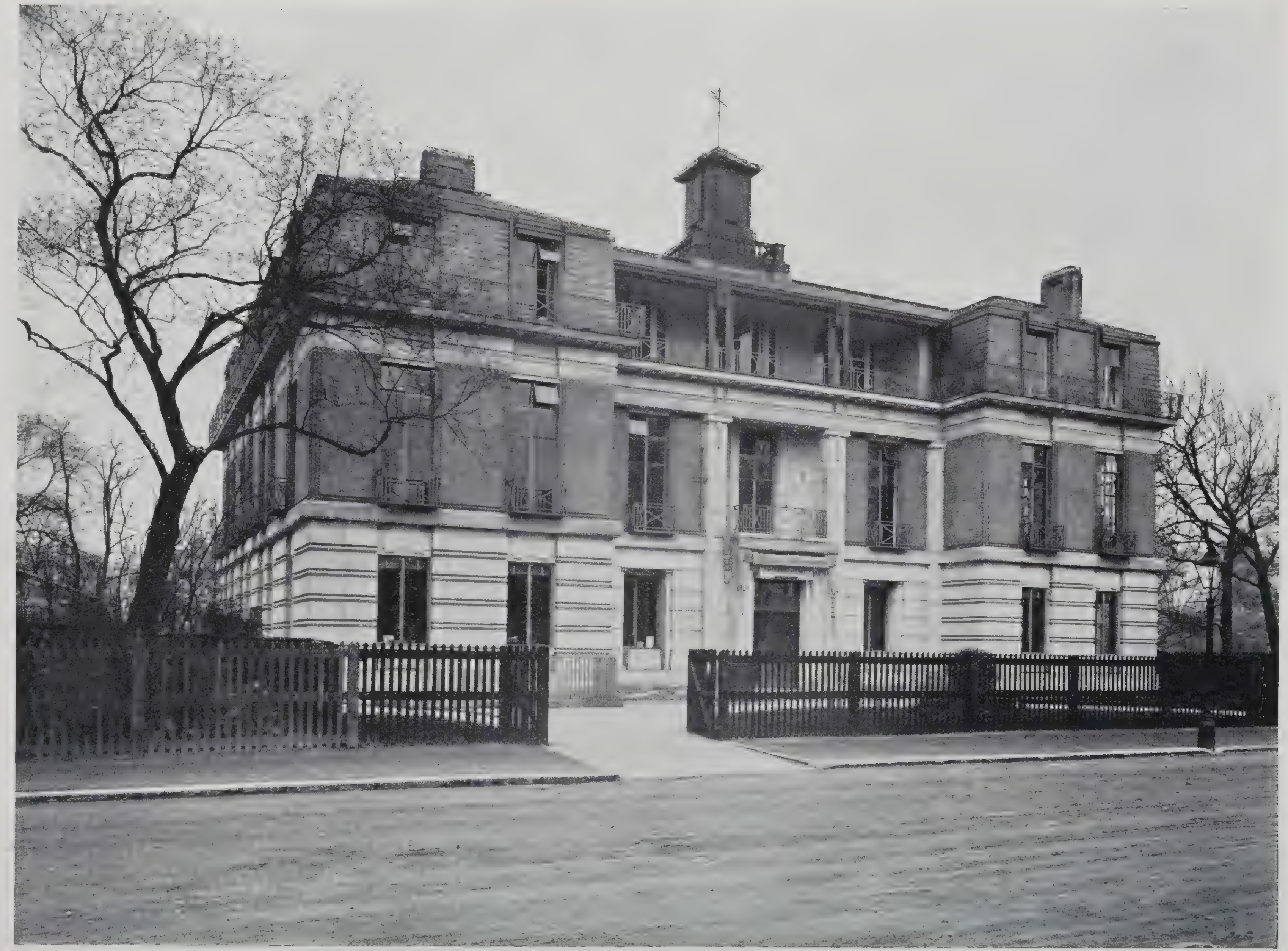


EW PREMISES FOR ZOOLOGICAL SOCIETY, REGENT'S PARK, LONDON.: JOHN BELCHER, R.A. AND J. J. JOASS, F.R.I.B.A., ARCHITECTS.

The floor of the entrance lobby and hall is laid in black and white marble, and the council room has a panelled dado in oak.

On the exterior, Portland stone has been used for the ground storey, and for the entablature and cornice at second-floor level, the walls between being of Luton bricks. The top storey is hung with green tiles, and the roof also is formed with these and with lead. Centrally placed is a "lantern" with balustrade around, the detail of which, as also that of the timberwork below, exhibits much individuality of design. The work of Messrs. Belcher and Joass is always of a very interesting character, and this building, though not a large one, is exactly such as we might expect to receive from the hands of such architects.

The general contractors for the building were Messrs. G. Godson and Sons, of West Kilburn, N.W. Casements and cloak-room fittings were supplied by the Crittall Manufacturing Company; sanitary fittings and glazed bricks by the Leeds Fireclay Company; marble flooring by J. Whitehead and Sons, Ltd.; door furniture by N. F. Ramsay and Co.; lift by Archibald Smith and Stevens; special furnishings by John P. White. The electric wiring is by Strode and Co.; reinforced concrete floors by Lewis Rugg and Co.; fire-resisting glazing by British Luxfer Prism Syndicate, Ltd



NEW PREMISES FOR ZOOLOGICAL SOCIETY, REGENT'S PARK, LONDON.
JOHN BELCHER, R.A., AND J. J. JOASS, F.R.I.B.A., ARCHITECTS.

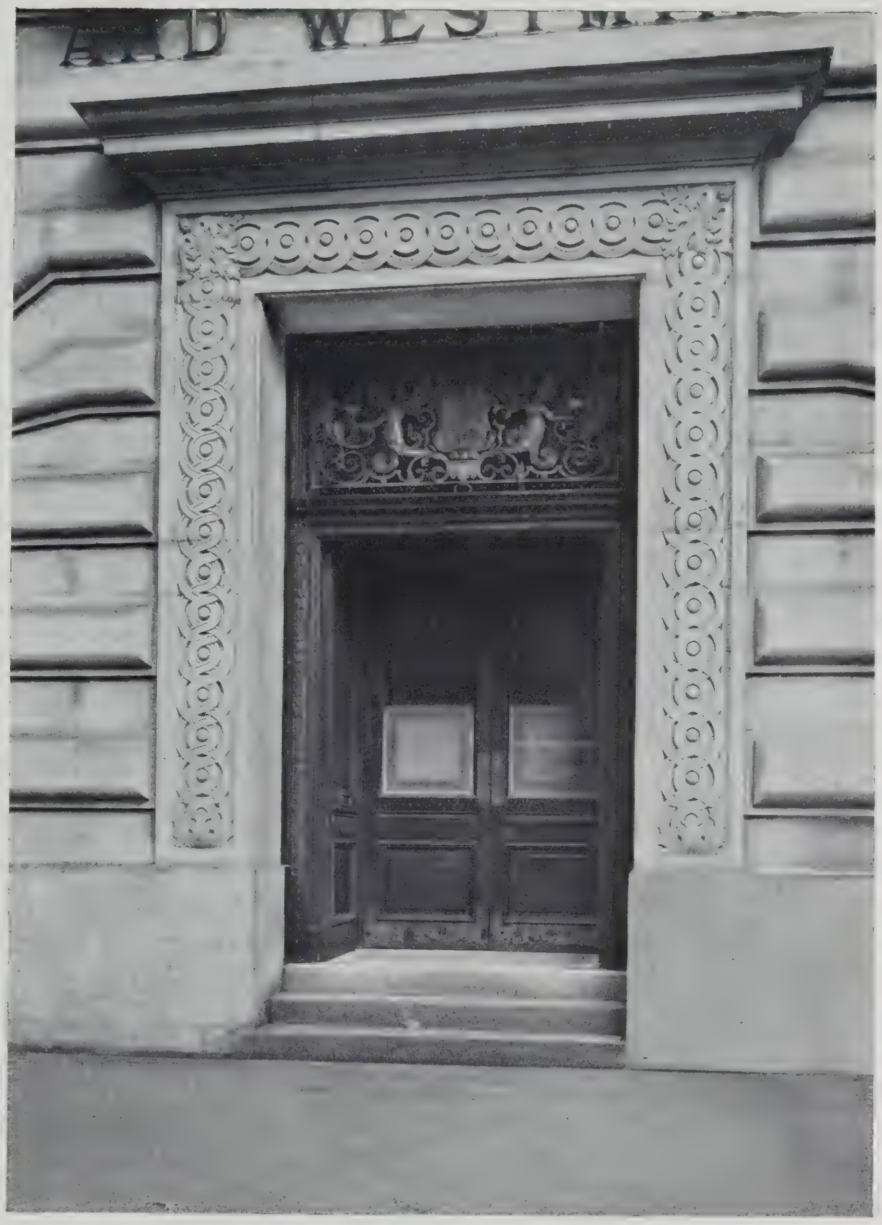
ROYAL EXCHANGE BUILDINGS, LONDON, E.C.

This block of buildings, occupying a site t the rear of the Royal Exchange, has een erected in two contracts, the first, omprising the northern half, occupied by he Union Assurance Society, Ltd., having een completed two years ago by Messrs. Valter Lawrence and Son, of London, E.C., nd the second, comprising the southern alf, occupied by the London County and Vestminster Bank, Ltd., having been completed this year by Messrs. Dove Bros., td., of London, N.

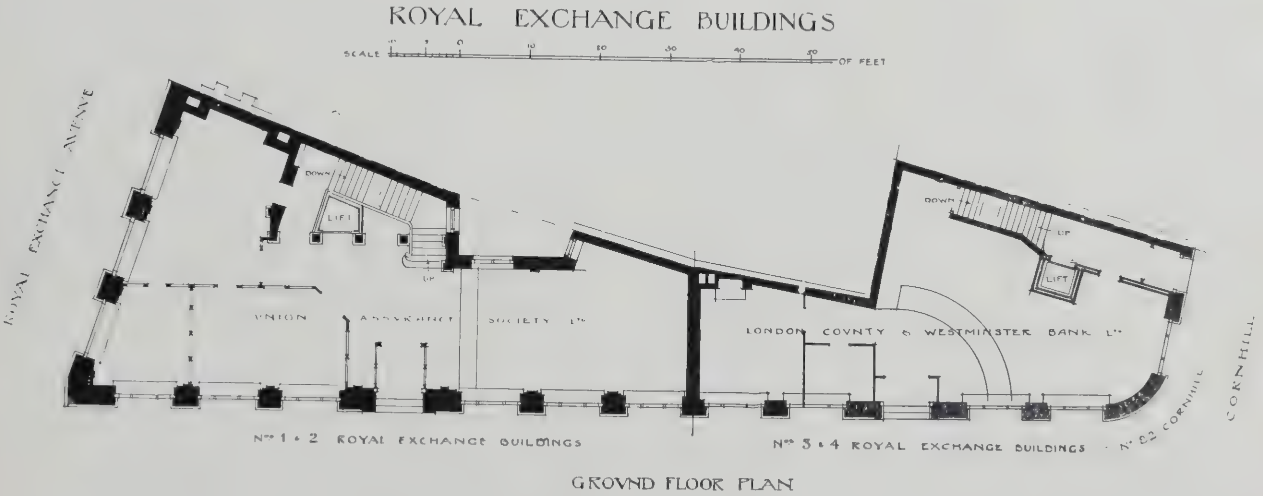
The façade is of Portland stone, 160 ft. ɪng, broken by two recessed balconies ith columns and pediments. The ground oor and mezzanine are boldly rusticated, hile at cornice level is a range of shields, chly carved. All the stone-carving, includɪg the cartouche with a female head at ɪe angle to Cornhill, was executed by Mr. lbert Hodge. The two main entrances re framed in with a carved border of iterlaced ornament, and over the doors re bronze panels by the Artificers' Guild, td., of London. The walls of the general ffices of both the Bank and the Assurance ociety are lined with marble; the Assurɪce office, too, has a pavonazzo marble aircase with lift in centre (the enclosing onwork of which was executed by the rtificers' Guild), and on the first floor is a ɪnelled board-room.

The building is of fire-resisting construcon with copper-covered roofs, and in each the two portions are sub-basements ecially constructed as strong-rooms.

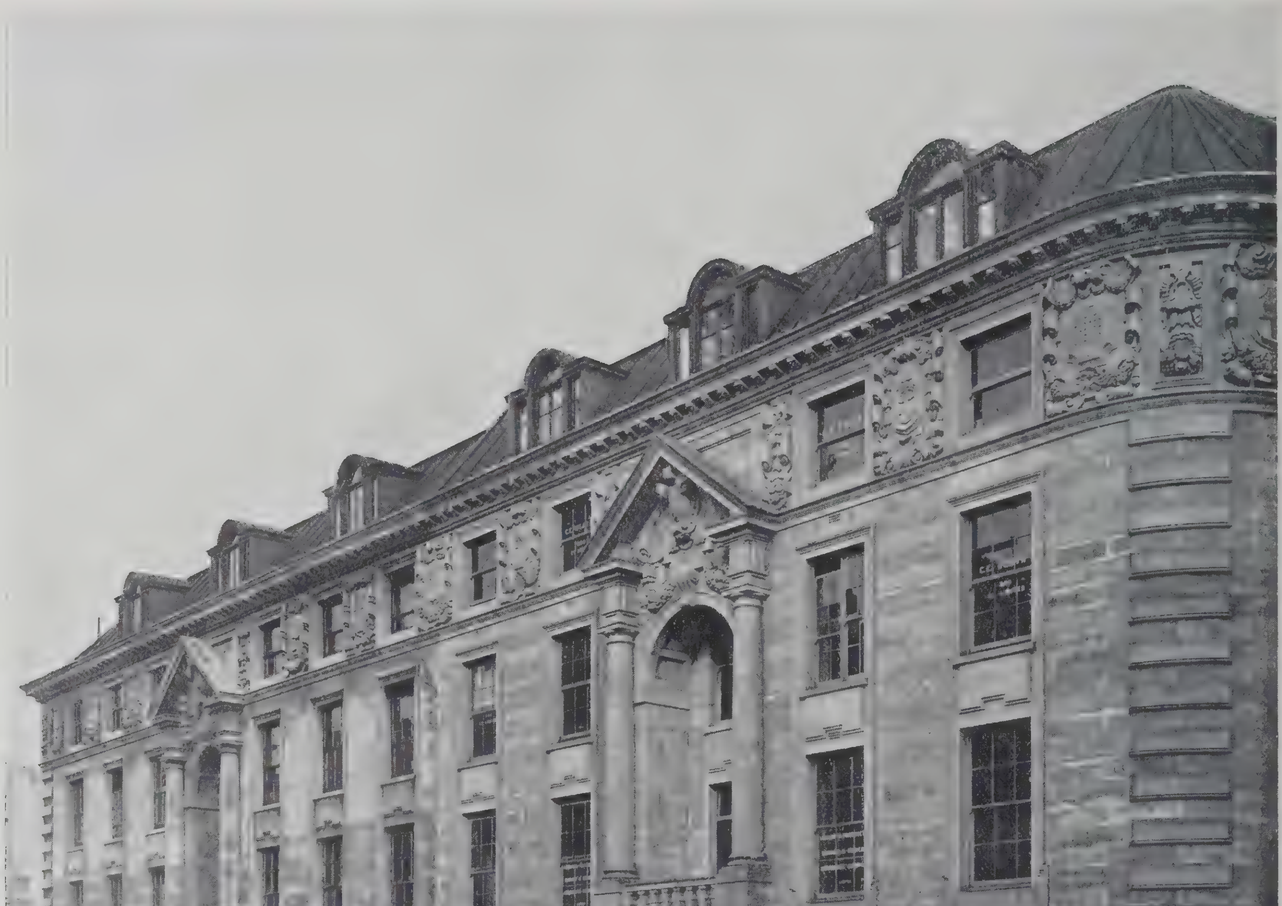
Messrs. the Kleine Patent Fire-Resisting looring Syndicate, Ltd., constructed floors ɪd roofs; Messrs. Doulton and Co., Ltd., ɪd Messrs. Dent and Hellyer, Ltd., supplied nitary fittings; Mr. Robert Adams, eather bars for windows; Messrs. the ritish Luxfer Prism Syndicate, Ltd., ɪvement lights; Messrs. the Otis Elevator ., Ltd., the lift; Messrs. R. E. Pearse ɪd Co., Ltd., the metal casements and onze screens over counters in bank.



ROYAL EXCHANGE BUILDINGS: ENTRANCE.

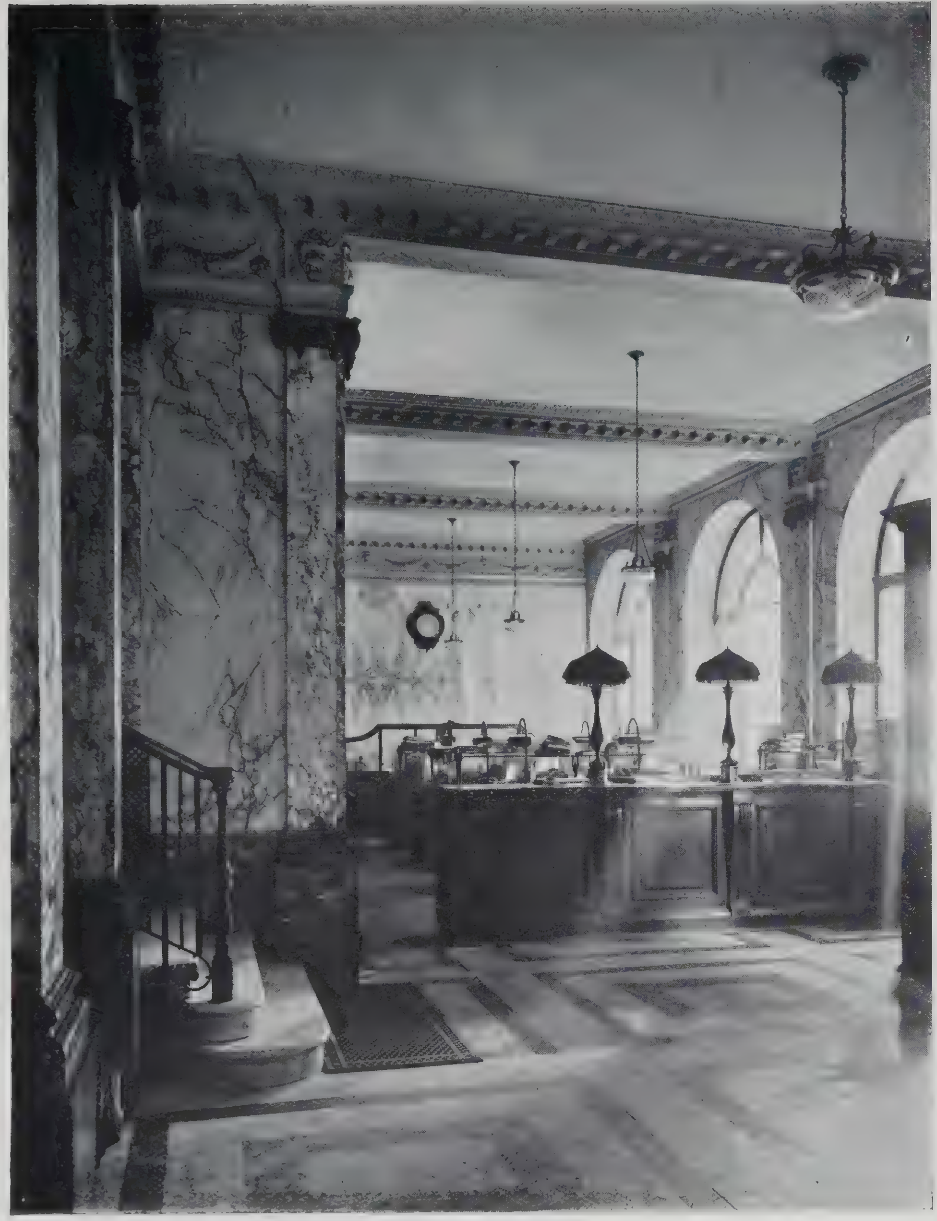

ROYAL EXCHANGE BUILDINGS
SCALE 10 5 0 10 20 30 40 50 OF FEET
ROYAL EXCHANGE AVENUE
DOWN
LIFT
UP
UNION ASSURANCE SOCIETY Ltd
LONDON COUNTY & WESTMINSTER BANK Ltd
DOWN
UP
LIFT
CORNHILL
Nos 1 & 2 ROYAL EXCHANGE BUILDINGS
Nos 3 & 4 ROYAL EXCHANGE BUILDINGS
No 82 CORNHILL
GROUND FLOOR PLAN

SIR ERNEST GEORGE, A.R.A., AND YEATES, ARCHITECTS.

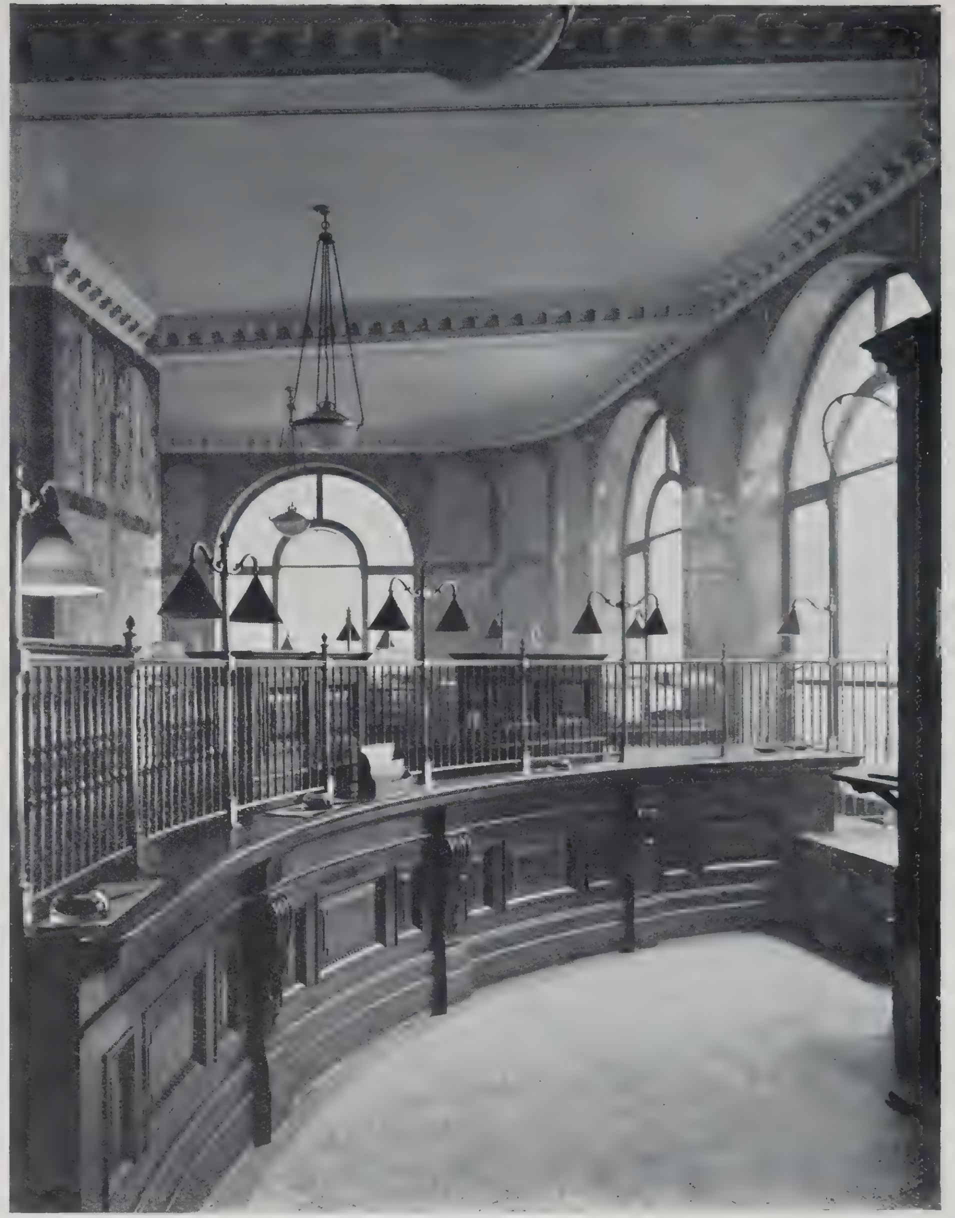


ROYAL EXCHANGE BUILDINGS, LONDON.

SIR ERNEST GEORGE, A.R.A., AND YEATES, ARCHITECTS.



General Office of the Union Assurance Society, Limited.



General Office of the London County and Westminster Bank, Limited.

ROYAL EXCHANGE BUILDINGS, LONDON, E.C. SIR ERNEST GEORGE, A.R.A., AND YEATES, ARCHITECTS

THE ROYAL LIVER BUILDING, LIVERPOOL.

The new building erected by the Royal Liver Friendly Society on the northern portion of the site formerly occupied by the George's Dock at the Pierhead, Liverpool, was formally opened by Lord Sheffield in July last. Its total cost is estimated at about £650,000.

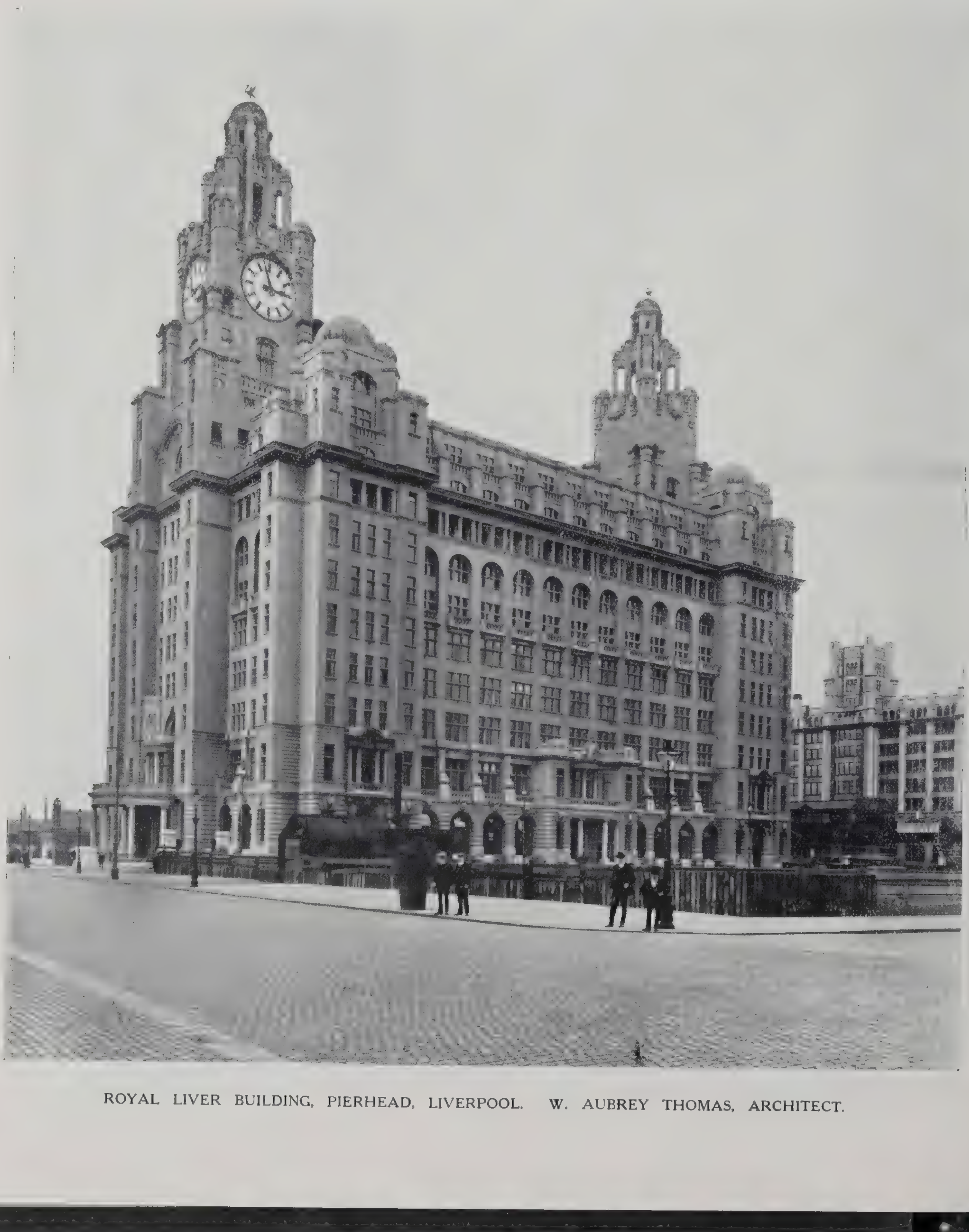
Mr. W. Aubrey Thomas, of Liverpool, was the architect, and Captain H. Riall Sankey, R.E. (retired), of Westminster, the consulting engineer.

The building is 301 ft. long by 177 ft. 6 in. wide, the height from pavement level to the main roof being about 170 ft., and to the top of the towers approximately 300 ft. The main cornice, at seventh-floor level, is 140 ft. above ground, and projects 5 ft. 6 in. from the face of the building. The structure comprises a basement with ten upper floors, while in the two towers are six storeys above roof level.

The skeleton of the building is of monolithic reinforced concrete on the "Hennebique" system, the columns, beams, and arches being all carried out in that material and bonded together. The floors are of hollow fireclay blocks covered with concrete, the corridor and tenancy walls being of fireproof hollow bricks.

The site being made ground, it was impossible for this to withstand the enormous loads involved. Solid concrete foundations were therefore carried down to the Old Red Sandstone 32 ft. to 47 ft. below the normal surface level, and on this sure base the superstructure was erected. Around the site, too, a reinforced concrete retaining wall was built, surrounding the basement of the building and keeping it free from tidal water.

For the exterior walls grey granite, obtained from various Norwegian, Swedish, and Scottish quarries, was

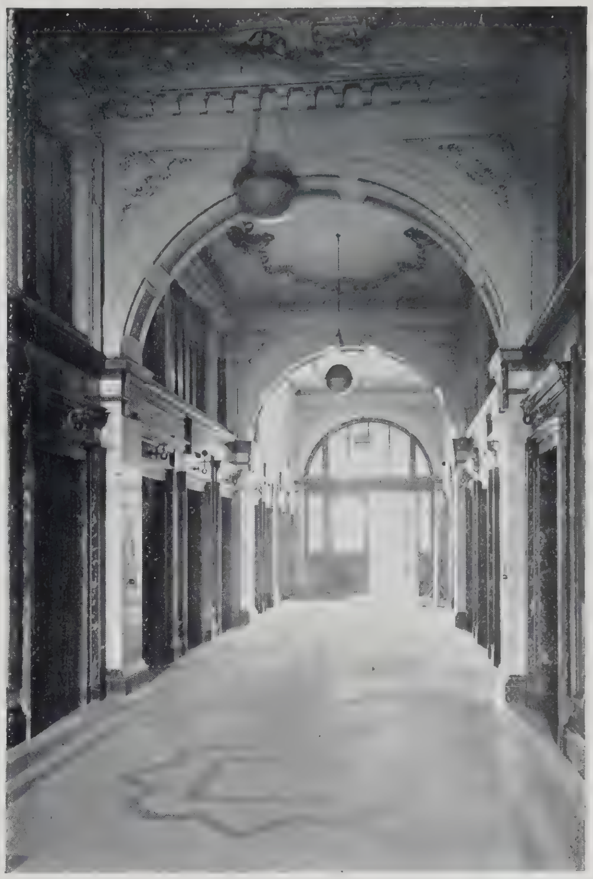


ROYAL LIVER BUILDING, PIERHEAD, LIVERPOOL. W. AUBREY THOMAS, ARCHITECT.

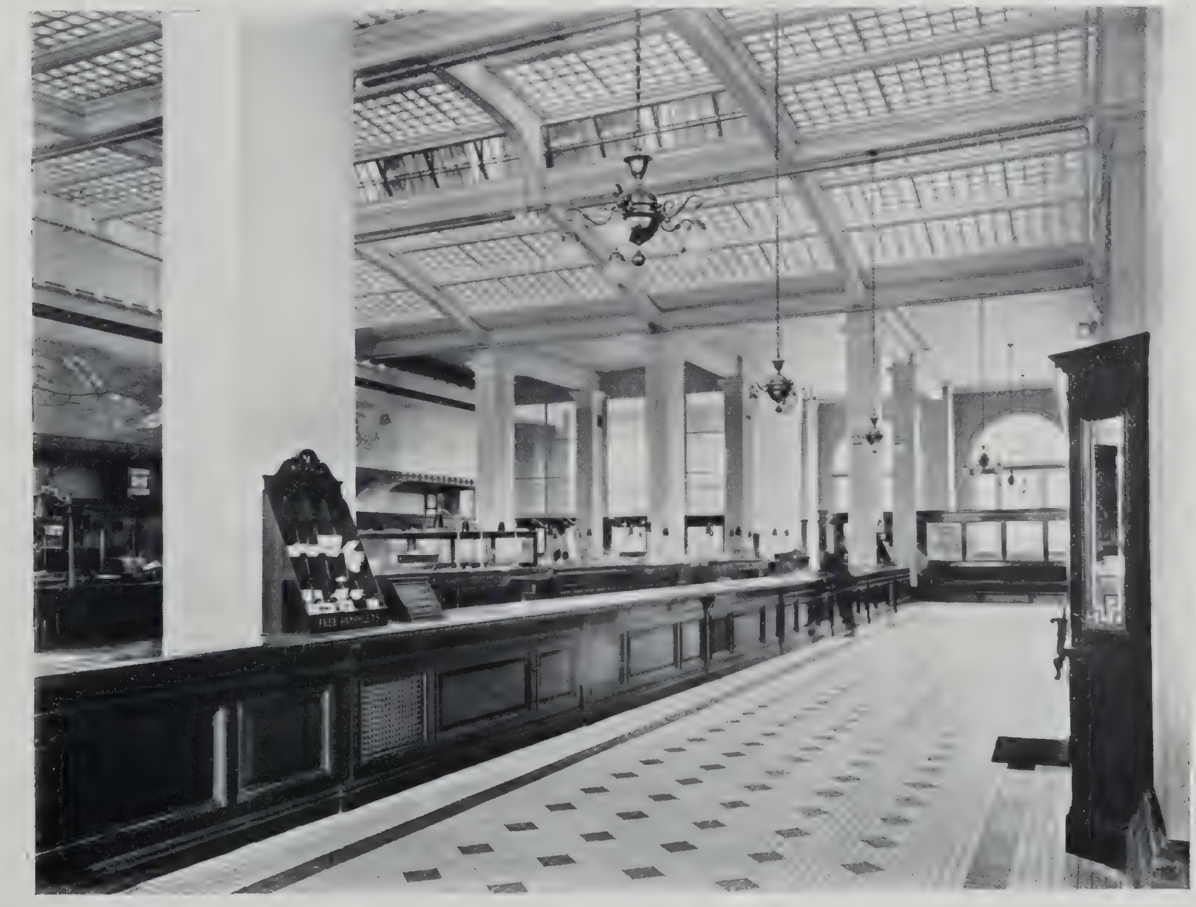
ised, the whole of the granite facings having been fixed y Messrs. A. and F. Manuelle, of London, whose quarries vere also responsible for a considerable portion of the upply. The amount of granite employed is, of course, normous, there being about 300,000 cubic feet, weighing bout 25,000 tons, the bulk of which is Norwegian granite. The dressings are graduated from fine-axed on the lower loors to rough-picked faces for the top portions of the owers, the carved work comprising cartouches, keystones, wags, and other details. As stated, the granite forms the uter envelope of the reinforced concrete skeleton. It is, owever, an integral part of the structure, built on.

The internal lighting of the building is provided by neans of two large wells, each about 60 ft. square, faced vith white glazed bricks, and having windows fitted with teel casements, supplied by Messrs. Henry Hope and ons, Ltd., of Birmingham. Steel casements also have een used for the windows on the main elevations, and ll external windows are glazed with ¼ in. plate glass.

Two features of special interest in the internal arrangenents are the lift and heating installations. The former by Messrs. Waygood and Co., Ltd., of London) comrises fifteen high-speed electric passenger lifts, serving ll floors, two electric goods lifts, and an hydraulic goods ift, from the basement to the ground floor. Ten of the ifts are ranged on either side of the entrance corridor, vhich is 16 ft. wide, six of them being express lifts which un at full speed until reaching the floor they first serve, nd then slow down automatically for the floors above. They are operated by motors placed at roof level. Altoether this lift installation, the largest in the United Kingdom, is a notable one.


ROYAL LIVER BUILDING: ENTRANCE CORRIDOR.

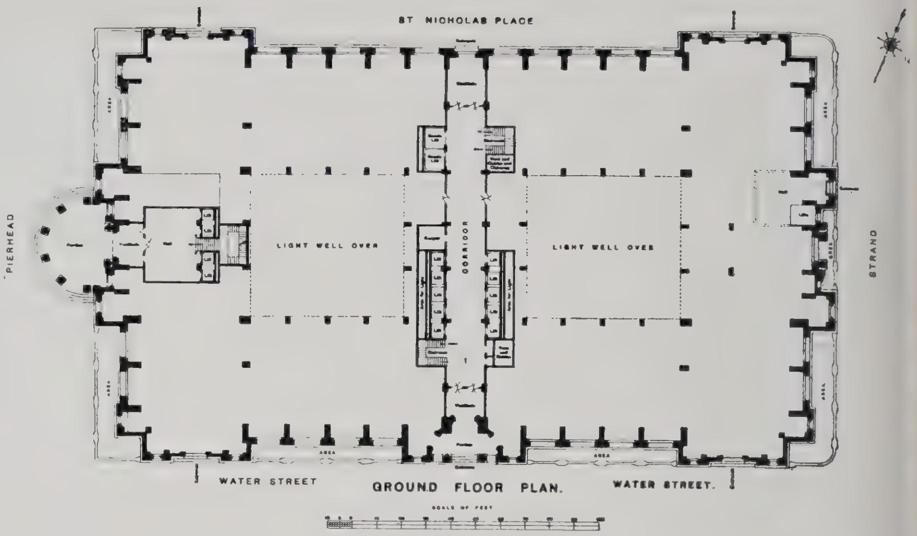
The heating installation (by Messrs. Richard Crittall nd Co., of London) is on the "hot panel" system—that s to say, the heating pipes, surrounded by a patent asbestos overing, are embedded in the floor, so that the latter ctually becomes heated, and thus warms the air in the oom. There are also wall panels below the windows, imilarly arranged. The heating is by hot water, supplied rom four large boilers in the basement, which are automatically fed by "Bennis" stokers. The installation has been tested over a period of many months, and is stated to be thoroughly satisfactory. Its outstanding feature is, of course, that the rooms are free of all radiators, and that therefore there is a greater degree of convenience and


ROYAL LIVER BUILDING, LIVERPOOL: CANADIAN PACIFIC RAILWAY COMPANY'S OFFICES.
W. AUBREY THOMAS, ARCHITECT.

cleanliness. The heating pipes are entirely covered with a special composition supplied by the Durato Asbestos Flooring Co., of London, in connection with which extensive experiments were undertaken in order to secure a material which, while forming a good hard floor, could withstand the considerable expansion of the pipes, at the same time being a good conductor and radiator of heat. The whole of the floors in the building, with the exception of some of the central corridors, are laid with "Durato."

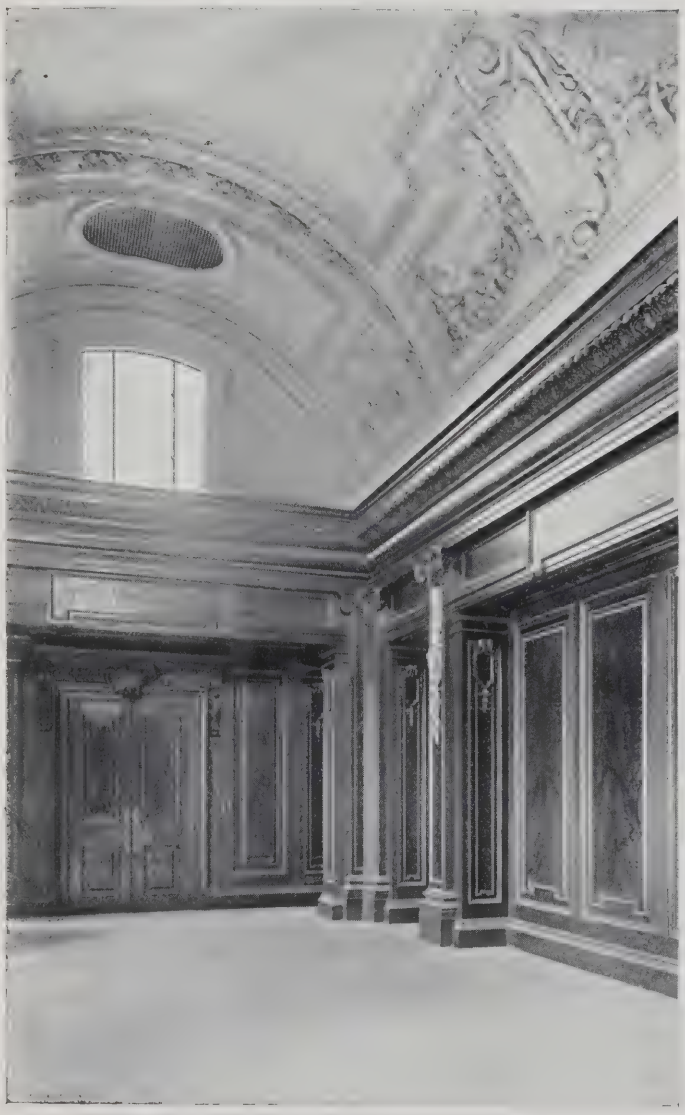
The ventilation of the offices and corridors is effected by means of exhaust shafts leading to powerful centrifugal cased fans discharging into the open air at roof level.

Another feature of the building is the large clock, the dials of which (three on the western tower and one on the eastern tower facing the city) are 25 ft. in diameter. The clock is electrically operated. Unlike most clocks of its kind, however, it does not move in half-minute impulses, but continuously by means of worm gearing. The minute hand is 14 ft. long and nearly 3 ft. across at its widest part, the two hands together weighing 5 cwt; they are of copper. The clock is regulated with Greenwich time daily, and is artificially illuminated by an automatic device which switches on the light at dusk and switches it off at dawn. Messrs. Gent and Co., Ltd., of Leicester, were the makers of the clock.



GROUND FLOOR PLAN.

ROYAL LIVER BUILDING, LIVERPOOL.



ROYAL LIVER BUILDING, LIVERPOOL: THE BOARD-ROOM
W. AUBREY THOMAS, ARCHITECT.

The building is almost entirely devoted to office purposes the main space in the basement and on the ground floor being occupied by the Canadian Pacific Railway Company, whose offices have been carried out by Messrs. Waring and Gillow, of Liverpool, from designs originally prepared by the architect.

Of the storeys above, one whole floor (the fourth) is occupied by Messrs. Lever Brothers, Ltd., the eighth and a large portion of the ninth floors are taken as the chief offices of the Royal Liver Friendly Society (who also retain the portico and hall on the west front for their exclusive use, with four private lifts and a staircase connecting with the floors above), and a large suite of rooms on the top floor and in the towers is in the occupation of the Liverpool Club.

In the Royal Liver Society's suite the chief apartment, from an architectural point of view, is the board room. This is panelled out in African walnut, with carved drops in light wood on the pilasters. The woodwork is by Messrs. Wylie and Lochhead, of Glasgow. There is also a boldly modelled plaster ceiling to this room, the work of Messrs. Ben Henry Johnson and Sons, of London and Liverpool, who have executed the whole of the plastering to walls and ceilings throughout the building—an immense job, comprising no less than thirty acres of plastering and Parian cement work and nearly as many miles of cornices, skirtings, and mouldings. Messrs. Johnson also carried out the granolithic flooring. For encasing work Expanded Metal (supplied by the Expanded Metal Co., Ltd., of London and West Hartlepool) has been used.

The electric-light fittings throughout are by the General Electric Co., Ltd., of Manchester.

The contractors for the foundations of the building were Messrs. William Brown and Sons, of Manchester, and the general contractors for the superstructure were Messrs. E. Nuttall and Co., of Manchester. Among the subcontractors not already mentioned were the following:—

Plumbing and sanitary work, Wm. Griffiths and Sons, Ltd., Liverpool; sanitary fittings, John Bolding and Sons, Ltd., London; electric wiring, Dargue, Griffiths and Co., Liverpool; folding shutters, the Sefton Lift and Shutter Co., Liverpool; engines and dynamos, Ashworth and Parker, Bury; cables, Siemens Bros. and Co., Ltd., London; concrete mixers, Ransome verMehr Machinery Co., Westminster; asphalt, G. Henry Johnson and Sons, Liverpool; terracotta fresh-air inlets, Doulton and Co., Ltd., London; door furniture, J. Gibbons, Wolverhampton, and Henry Hope and Sons, Ltd., Birmingham; staircase enclosures, Baird and Sons, Ltd., Liverpool; wall tiles and mosaic flooring, John Stubbs and Sons, Liverpool; patent glazing and fittings, Williams and Watson, Ltd., Liverpool; stoves, grates, and mantels, Bell Range and Foundry Co., Northampton; gasfitting, Liverpool Gas Fittings Co.; stained glass and leaded lights, H. G. Hiller, Liverpool; stair-treads, Diamond Tread Co., Ltd., London; telephones, National Telephone Co., Ltd.; strong-room doors, safes, etc., Milner's Safe Co., Ltd., Liverpool; lightning conductors, H. G. Riddell, Liverpool; granite, Cooper, Wettern and Co., London; John Fyfe, Ltd., Aberdeen; D. H. and J. Newall, Dalbeattie.

THE KODAK BUILDING, KINGSWAY, LONDON.

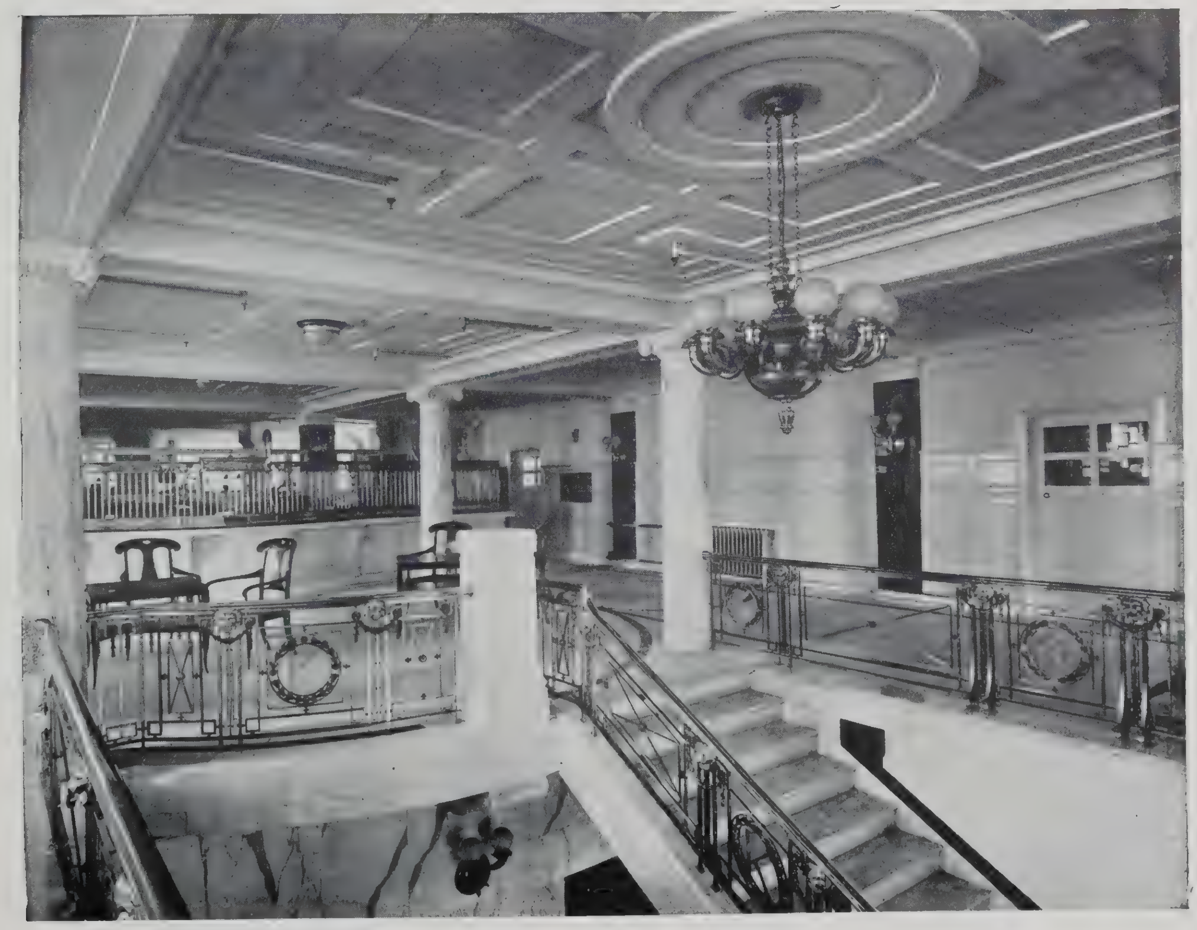
The new premises in Kingsway, London, recently completed for Messrs. Kodak, Ltd., form the headquarters of the company for Europe. The main entrance leads into a marble-lined vestibule, from which there is a side entrance to the Kodak shop (which is entered also from Kingsway). The main staircase, also finished with marble, rises out of the vestibule and leads to the first-floor reception-hall, a large open space floored with marble and mosaic and walled by a wood and glass screen, giving access to the various private rooms. At the back of the reception-hall is the counter of the cashier's department, finished with an ornamental grille in oxidised bronze. The handrailing to the main staircase is in "armour-bright," with oxidised bronze enrichments and a bright white-metal handrail. The remaining four floors, above the first floor, are occupied by the various departments of the company, to which access is provided by the staff staircase, entering from Wylde Court, and the service staircase, entering from Keeley Street. Beside the staff staircase are two passenger elevators, and beside the service staircase are two goods elevators, both running from the basement to the top of the building.

The ground floor is occupied by two shops (one being let) and by the Kodak warehouse at the rear. Here, towards Keeley Street, is an unpacking-room with a quay suitable for carts, and shut off from the street by a large entrance closed by a fire-resisting roller-shutter (supplied and fixed by Messrs. Arthur L. Gibson and Co.). The basement contains shop premises, stores, heating plant, artesian-well plant, and lavatories.

The building is constructed, in front, of Portland stone on a Norwegian granite base, with one or two marble bands. The Keeley Street side is of Heather red bricks with Portland stone dressings and the Wylde Court side of white glazed bricks with similar dressings. The building is a steel-frame structure with patent fire-resisting floors, on a raft and with retaining walls of reinforced concrete. The shop floors are laid with oak blocks, and the greater part of the other floors (except the reception-hall) with linoleum on a granolithic surface.

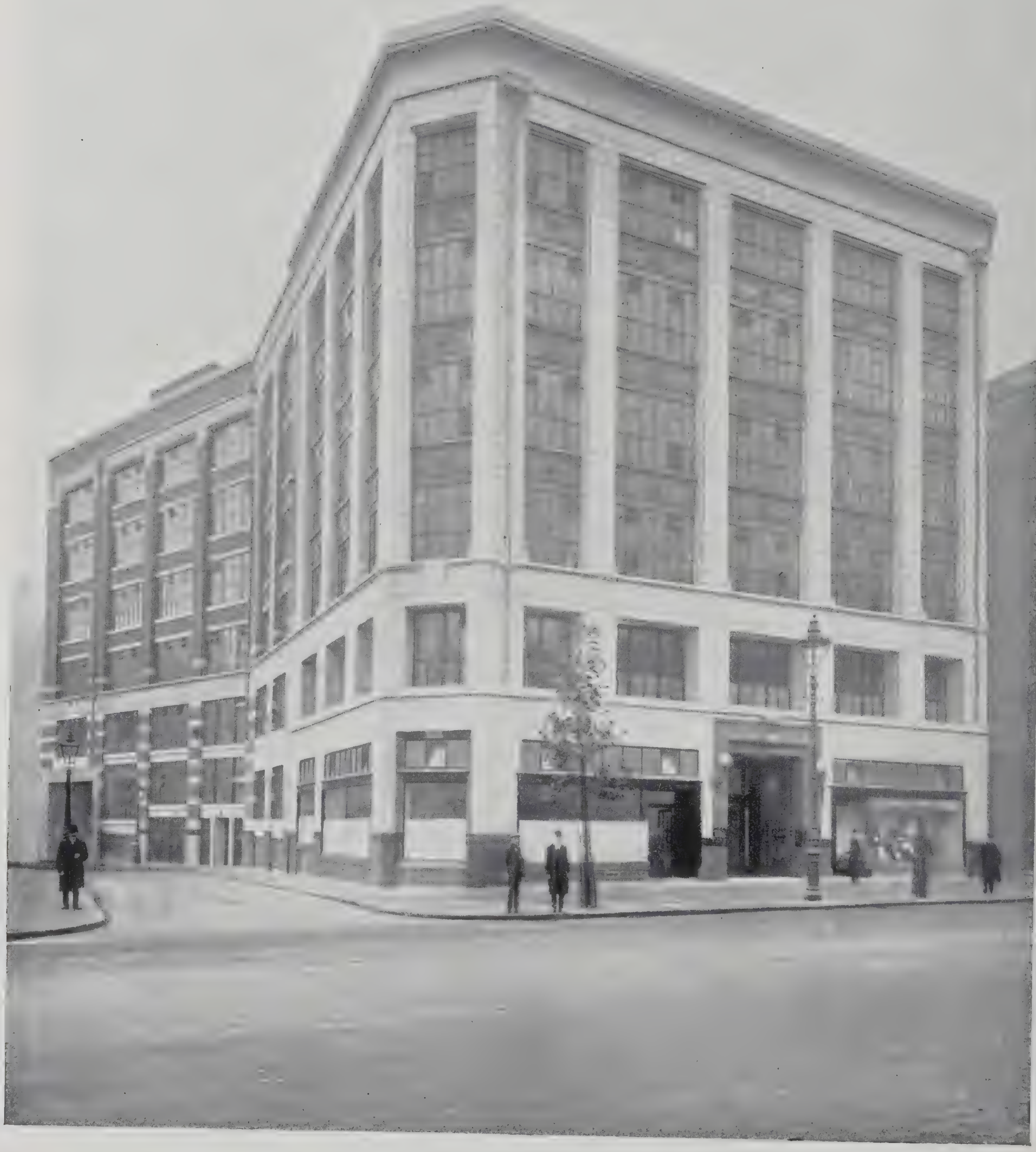
The architect was Mr. J. J. Burnet, LL.D., A.R.S.A., of Glasgow and London. The general contractors were the Allen Construction Company, of Glasgow, who were also responsible for the design and execution of the reinforced concrete construction work, the fire-resisting floors, and steel-frame work. Portland stone was supplied by C. W. Courtenay, granite by James Whitehead and Sons, patent glazing by the British Luxfer Prism Syndicate, Ltd., roof lights, pavement and stall-board lights (in Ferro-glass) by J. A. King and Co., casements by Henry Hope and Sons, Ltd., grates by Longden and Co. (now the Carron Co.), shop fittings (showcases, etc.) by E. Pollard and Co., sanitary fittings by Shanks and Co., plasterwork by Geo. Rome and Co. (modellers, H. H. Martyn and Co., Ltd.), special woodwork by Wylie and Lochhead, electric-light fittings by J. W. Singer and Sons, Ltd., folding gates, shutters, etc., by Arthur L. Gibson and Co., Ltd., and the Wilson Rolling Shutter Co., lifts by Smith, Major, and Stevens, gates, balustrading, etc., by the Bromsgrove Guild and George Wragge, Ltd., and board-room furniture and service screens throughout by Waring and Gillow, Ltd., Among other sub-contractors were the following :—

Diespeker, Ltd., wall tiles and mosaic flooring; the London Asphalt Co., asphalt roofing; Wm. Hendry and Son, plumbing and sanitary work; the Acme Flooring Co., wood-block flooring; Galbraith and Winton, marble-work; Tyler and Freeman, electric wiring and bells; Guthrie and Wells, leaded lights; James Gibbons, door furniture; Ashwell and Nesbit, Ltd., heating and ventilating; Redpath, Brown and Co., steelwork; Thomas Hall, linoleum floors; the Ratner Safe Co., fire-resisting doors; Isler and Co., artesian well.



THE KODAK BUILDING, KINGSWAY, LONDON: RECEPTION HALL, FIRST FLOOR.

J. J. BURNET, A.R.S.A., F.R.I.B.A., ARCHITECT.



THE KODAK BUILDING, KINGSWAY, LONDON.

J. J. BURNET, A.R.S.A., F.R.I.B.A., ARCHITECT.

THE UNIVERSITY COLLEGE OF NORTH WALES, BANGOR.

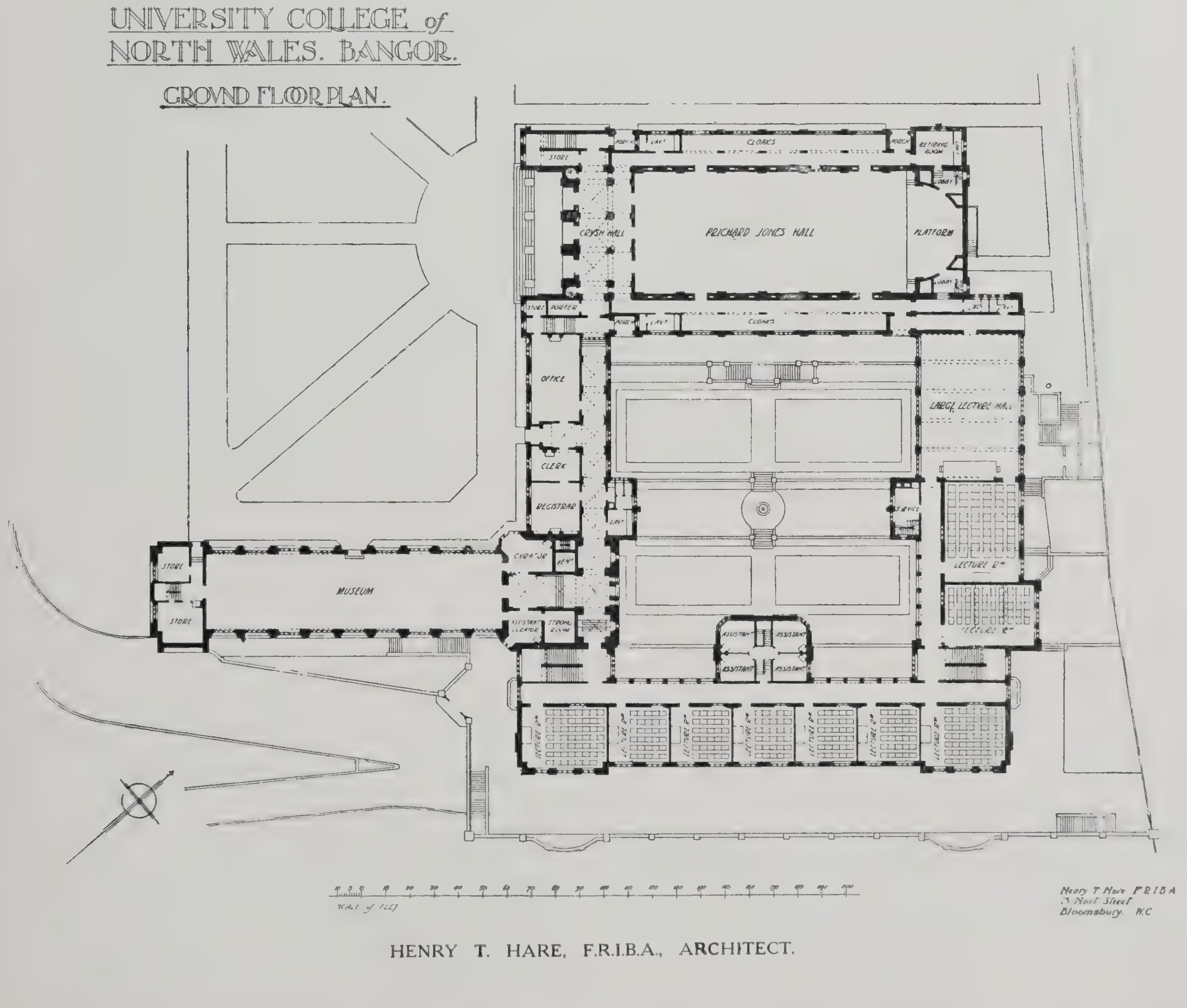
The University College of North Wales, which was opened His Majesty the King on July 14th, is a constituent llege of the University of Wales, and is incorporated by oyal Charter.

I 1885 physical and chemical laboratories were opened; 1888 the Agricultural Department was established; in 90 an Electrical Engineering Department was established; d this was followed by the establishment of the Day raining Department for Elementary School Teachers in 94, and of a Secondary Training Department (post-aduate) in 1897. By 1900 it had become evident that the llege had outgrown the possibilities of temporary accom-odation, and that the question of the provision of per-anent buildings must be faced. The original building as not merely inadequate in size, but wholly unsuitable in ructure and arrangement. A library, a large central hall, roper lecture theatres, common rooms and museums, gether with increased laboratory accommodation, were gently needed. In 1902 the Corporation presented the University as a free gift an extremely fine site of ore than ten acres in Upper Bangor, overlooking the city, which the College Council subsequently added, by urchase, an adjoining area of four acres. It was estimated at the cost of completing the college buildings on the new te for double the existing number of students would be bout £180,000. A subscription list was opened, and a stematic canvass of the whole ot North Wales was set on ot. With the aid of a Treasury grant of £20,000 the bscriptions had by 1905 reached a figure which justified e council in proceeding with the building. Competitive esigns were invited for the first and larger section of the permanent buildings required, and the design of Mr. Henry T. Hare, F.R.I.B.A., was selected. On July 9th, 1907, the first stone was laid by King Edward VII., and building was begun some months later. In 1909 the Drapers' Company made themselves responsible for the erection of the wing containing the library and museum, at a cost of £15,000, and in 1910 one of the vice-presidents of the College, Mr. (now Sir) John Pritchard-Jones, undertook to provide the great hall, which involved an expenditure of £17,000. The cost of the site and buildings now completed has been £127,500.

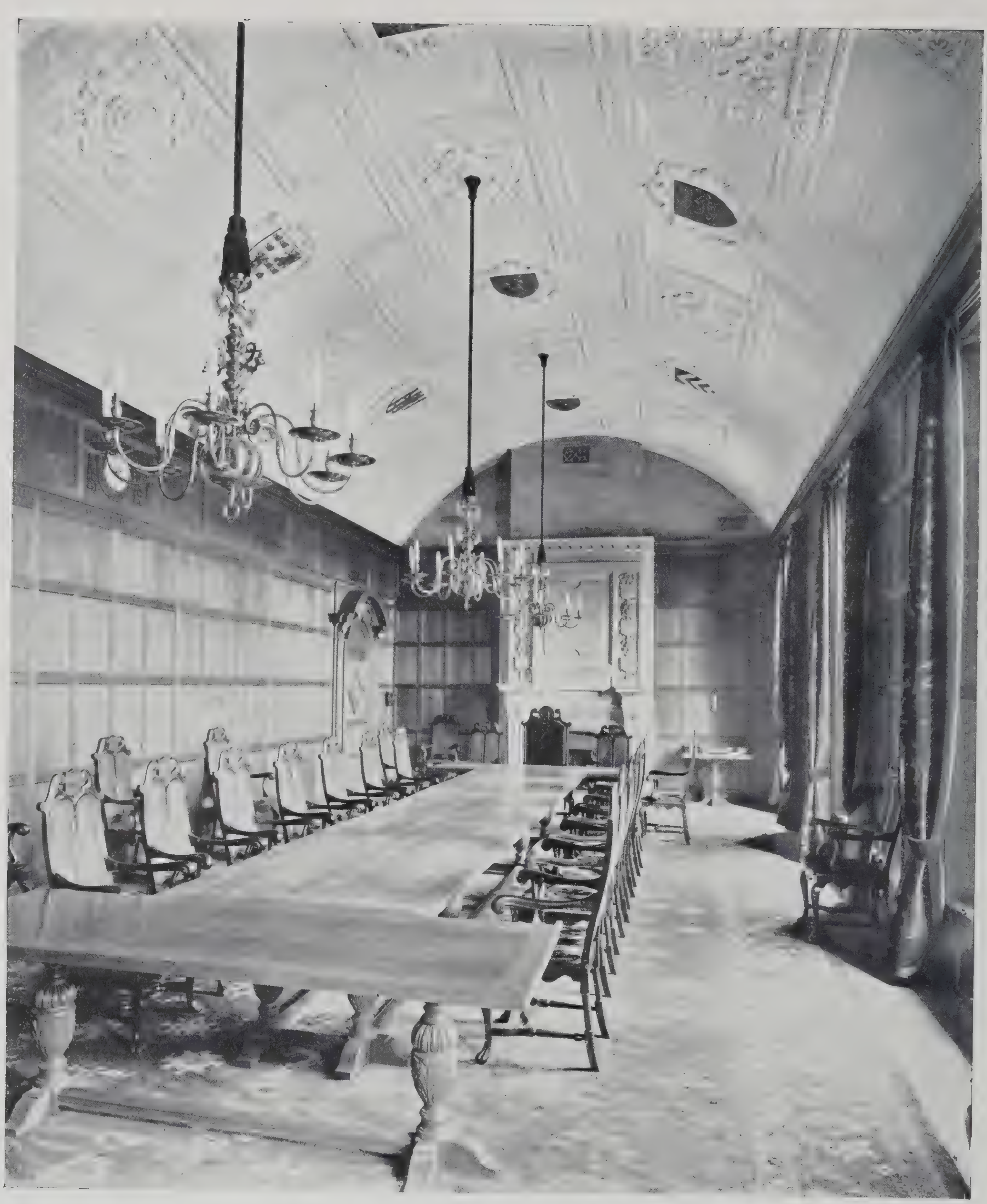
The entire scheme comprises the following sections: (*a*) Administrative, council chamber, etc.; (*b*) Arts Department; (*c*) Chemistry and Physics; (*d*) Botany and Geology; (*e*) Agriculture; (*f*) Great Hall; (*g*) Library and Museum. The portions at present erected include sections (*a*), (*b*), (*f*), and (*g*), the science work being carried on in the old college buildings.

The buildings are arranged in the form of two quadrangles, the smaller of which is completed, but only a part of the larger quadrangle is built at present. The buildings are faced with Cefn stone, which is also used internally for the principal rooms and corridors. The external walls have a vertical damp-course of "Hygeian Rock," necessitated by the exposed nature of the site. The roofs are covered with Precelly slates.

The dominating feature is the great hall, named, after the donor, the Pritchard-Jones Hall, which is on the highest portion of the site. This hall is 150 ft. long by 50 ft. wide, and can accommodate about a thousand persons.



HENRY T. HARE, F.R.I.B.A., ARCHITECT.



UNIVERSITY COLLEGE OF NORTH WALES, BANGOR: THE COUNCIL CHAMBER.

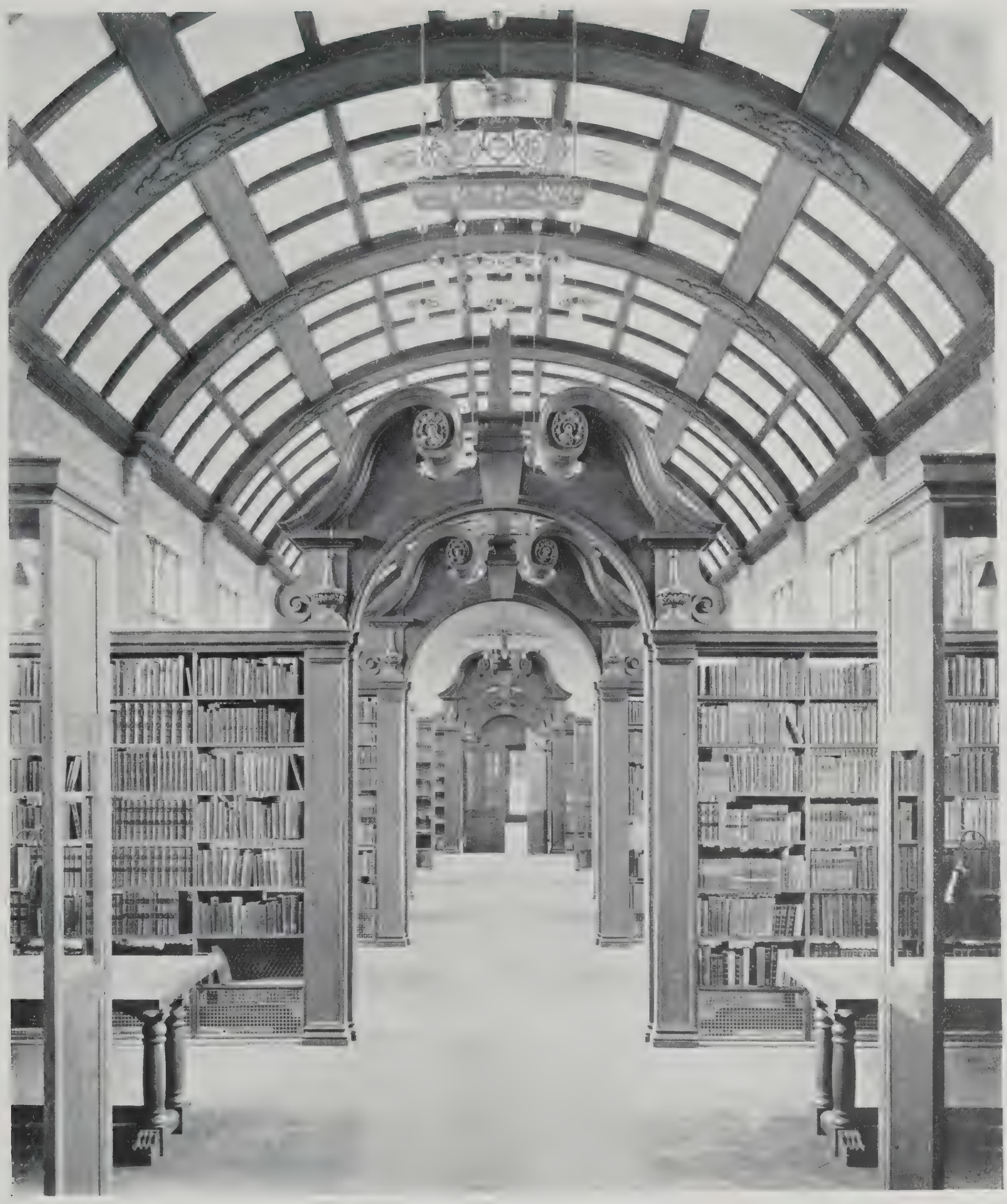
HENRY T. HARE, F.R.I.B.A., ARCHITECT.

The library and museum rooms are each 32 ft. wide and 134 ft. long, lighted from both sides. The library has a barrel ceiling with wainscot ribs and plaster panels, displaying the arms of the counties and boroughs of Wales, and with its stock-rooms affords accommodation for about 100,000 volumes and 100 readers.

About half the entire frontage facing south-east is taken up by the arts section, which comprises four storeys. The ground floor consists of common and social rooms opening on to a terrace 25 ft. wide. On the first and second floors are eighteen classrooms capable of accommodating over 1,000 students at one time. The third floor consists of private rooms for the teaching staff.

It is hoped that it may be found possible to proceed at an early date with the science blocks, estimated to cost £80,000, and so to centralise the work of the college.

The general style of the design is that of the early English Renaissance. The detail is of a simple and appropriate character, the only enrichments being in the form of armorial bearings in carved stone, and in the glazing of the windows. These commemorate donors and benefactors in most cases, and in others are of local or historical significance. A large number of special donations have been made to the buildings, amongst them being a pair of wrought-iron entrance gates, and several stained-glass windows. Owing to the great variation in the levels of the site the buildings show con-

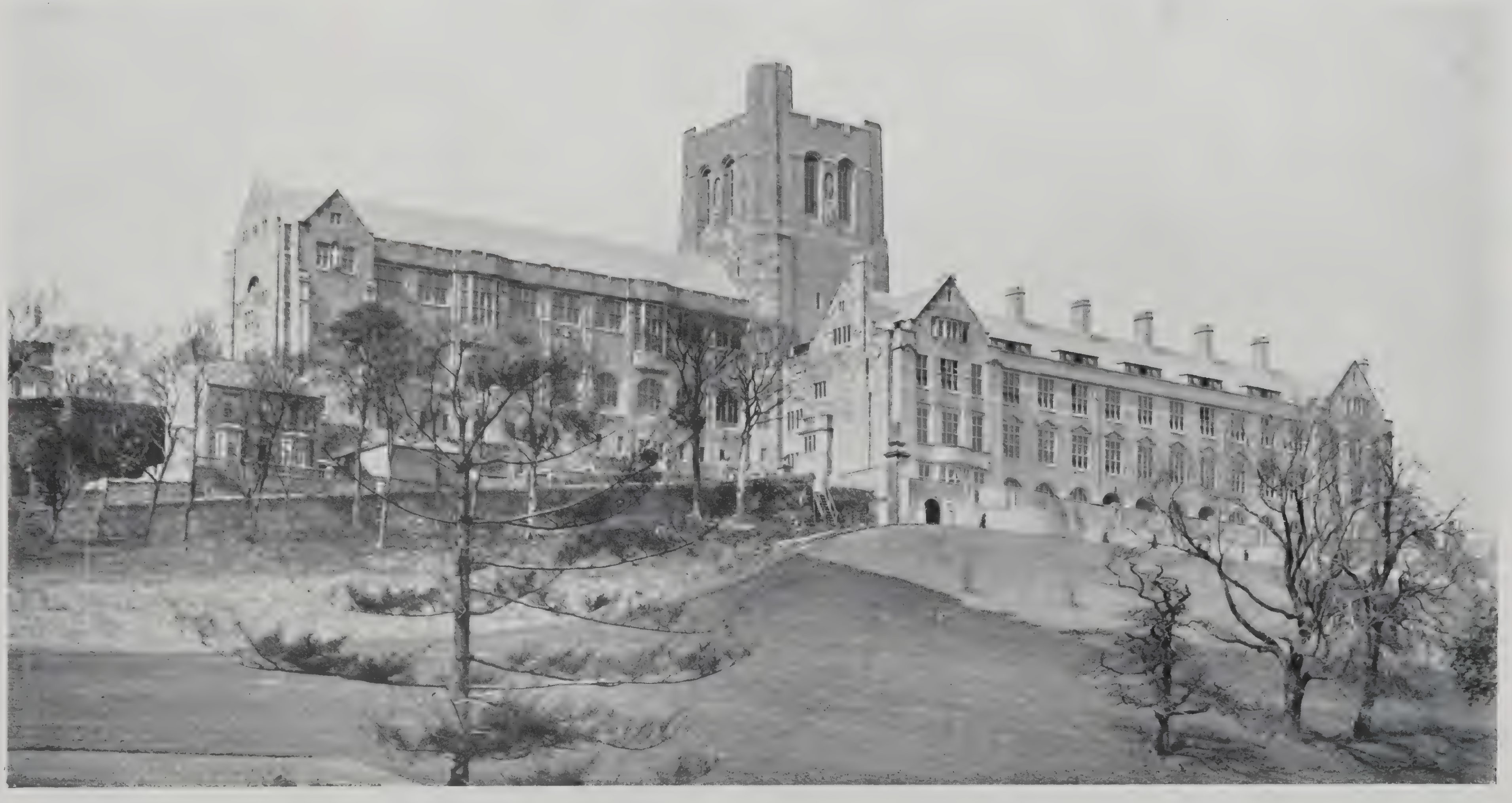


UNIVERSITY COLLEGE OF NORTH WALES, BANGOR: THE LIBRARY.

HENRY T. HARE, F.R.I.B.A., ARCHITECT.

siderable irregularity, some portions being four storeys in height and others only two, although the roofs throughout are practically of equal height. This has resulted in a picturesque and varied effect, which is eminently suitable to the position and surroundings. The buildings are well shown by the photograph reproduced on page 812, from which it will be seen that the grouping of the new college is very effective. The buildings form a dignified mass, crowning the high ground on which they stand, the sturdy central tower being a focus to the whole group. Mr. Hare has carried out collegiate work in several parts of the country—as, for example, in Westminster College at Cambridge—but never before has he achieved anything so fine as this. The opportunity for architectural effect was a great one, and the architect has used it to good advantage.

The general contractors were Messrs. Thornton and Sons, of Liverpool, and among the sub-contractors were the following :—Steelwork, floors, etc., Messrs. Aston and Sons ; steel casements, leaded glazing, and fanlight gearing, Messrs R. E. Pearse and Co., Ltd. ; grates, mantels, etc., Messrs Bratt, Colbran and Co. ; sanitary fittings, Messrs. John Bolding and Sons, Ltd. ; lead rain-water heads, etc., Mr. George P. Bankart (now associated with Messrs. Geo. Jackson and Sons, Ltd.) ; Hopton Wood stone paving, etc., Messrs. Hopton Wood Stone Firms, Ltd. ; electrical installation, bells, telephones, etc., Messrs. Higgins and Griffiths ; lifts, Messrs. Geo. Johnson ; art metalwork, gates, etc., Messrs. W. Bainbridge Reynolds, Ltd. ; heating and ventilating and cooking plant, Messrs. G. N. Haden and Sons ; safes, etc., Messrs. Milner's Safe Company, Ltd. ; door furniture, Messrs. the Artificers' Guild, Ltd.; plasterwork and special woodwork, Mr. Laurence A. Turner. In connection with the plasterwork Expanded Metal (supplied by the Expanded Metal Co., Ltd., of London and West Hartlepool) was used.



UNIVERSITY COLLEGE OF NORTH WALES, BANGOR: GENERAL VIEW. HENRY T. HARE. F.R.I.B.A., ARCHITECT.

GENERAL BUILDINGS, ALDWYCH, LONDON.

This building, at the eastern end of Aldwych, was ompleted in June last. It has been erected for the eneral Accident, Fire, and Life Assurance Corporation, td., from designs by Mr. J. J. Burnet, I.L.D., A.R.S.A., .R.I.B.A.

The building is of steel-frame construction, on a raft f reinforced concrete, and is fire-resisting throughout. he façade is of Portland stone with granite on the lower ortion, the caps to the granite columns being of black arble. Set back from the building line is a screen of restoia statuary marble, and above the columns are gures in white metal, symbolical of Strength, Prudence, bundance, and Prosperity. All the sculpture work is by Ir. Albert Hodge, the figures immediately over the screen epresenting Fire and Life, and those on the pediment ife. The window-frames of the lower portion are in oak, hose from the first floor to the cornice of deal with oak ills, while the pergola is in teak, with the soffit of its ornice decorated in heraldic colours. The roof is slated ith Westmorland green slates at the front, the flats being f reinforced concrete asphalted.

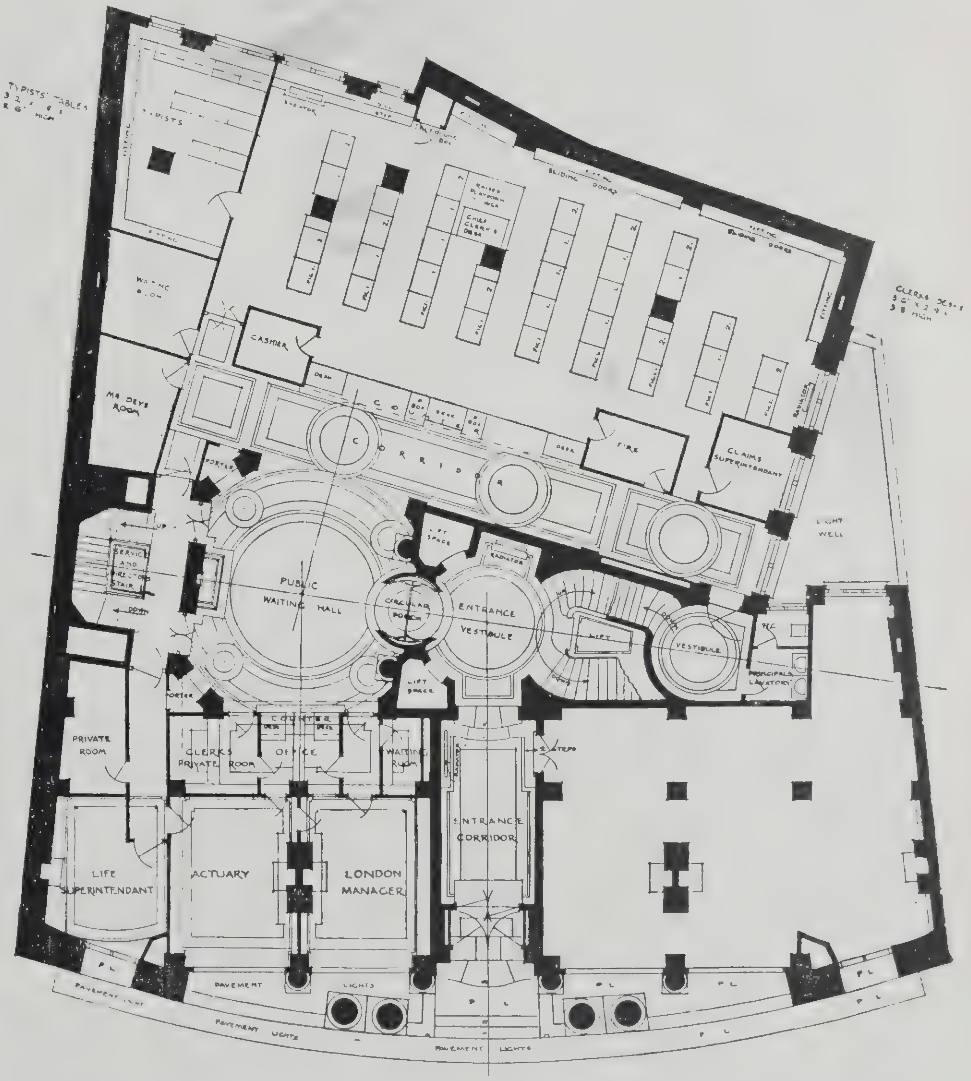
Access to the building is gained by the central entrance nly, the front doors being of oak cupronised. The entrance obby is paved with Sicilian marble, he walls being lined with Crestola tatuary, with bands of Greek lue and Mazzano marbles. This obby leads to the main staircase n the right, and the fire-resisting orch to the Corporation offices on he left. Passing through this porch he Corporation's main vestibule is eached. This is paved with marble, with a terrazzo centre, the walls eing lined with marble. The vestiule is lighted by a dome of stained glass, constructed in steel and brass, with antique hand finished ribs. On he right is the general office, with cubicles for the heads of departments, and various typists' and waiting-rooms, filing cabinets being arranged around the walls. On he left, and behind the small office, are the private rooms occupied by he various managers. Behind the ireplace is the Corporation's private tair and elevator, which transports he staff to the lavatories situated on he sixth floor. By ascending this stair, the mezzanine floor is reached. On two sides of the general office are galleries with accommodation for he Corporation staff. Fronting Aldwych on this floor are private ooms and the board room. The ast-mentioned room is panelled to a eight of 9 ft. A stained-glass panel n the door displays the Corporation's crest—the double-headed eagle, which is also repeated over the fireplaces and elsewhere. All the woodwork on the ground and mezzanine loors is in oak.

The basement floor is reached either by the Corporation's private taff stair or the public stair, which s situate at the east end of the general office. With the exception of a small portion in which safe accommodation is provided for tenants, the whole of the basement is used by the Corporation.

On the sub-ground floor are the stationery departments, the Corporation's private safes, and telephone exchange. Part of the ground floor adjacent to the entrance lobby is to be let, and access to the lettable floors above is gained by the main staircase and three elevators. It may be interesting to note that these floors can be very easily subdivided for the use of tenants, with the minimum loss of public passage.

Part of the fifth floor is occupied by the Corporation's medical department, while on the sixth floor are private lavatories for the male and female members of the staff, access to them being gained as stated above. Cut off from these lavatories, and entered from the main staircase, are the public lavatories for tenants. The caretaker's house is also on this floor.

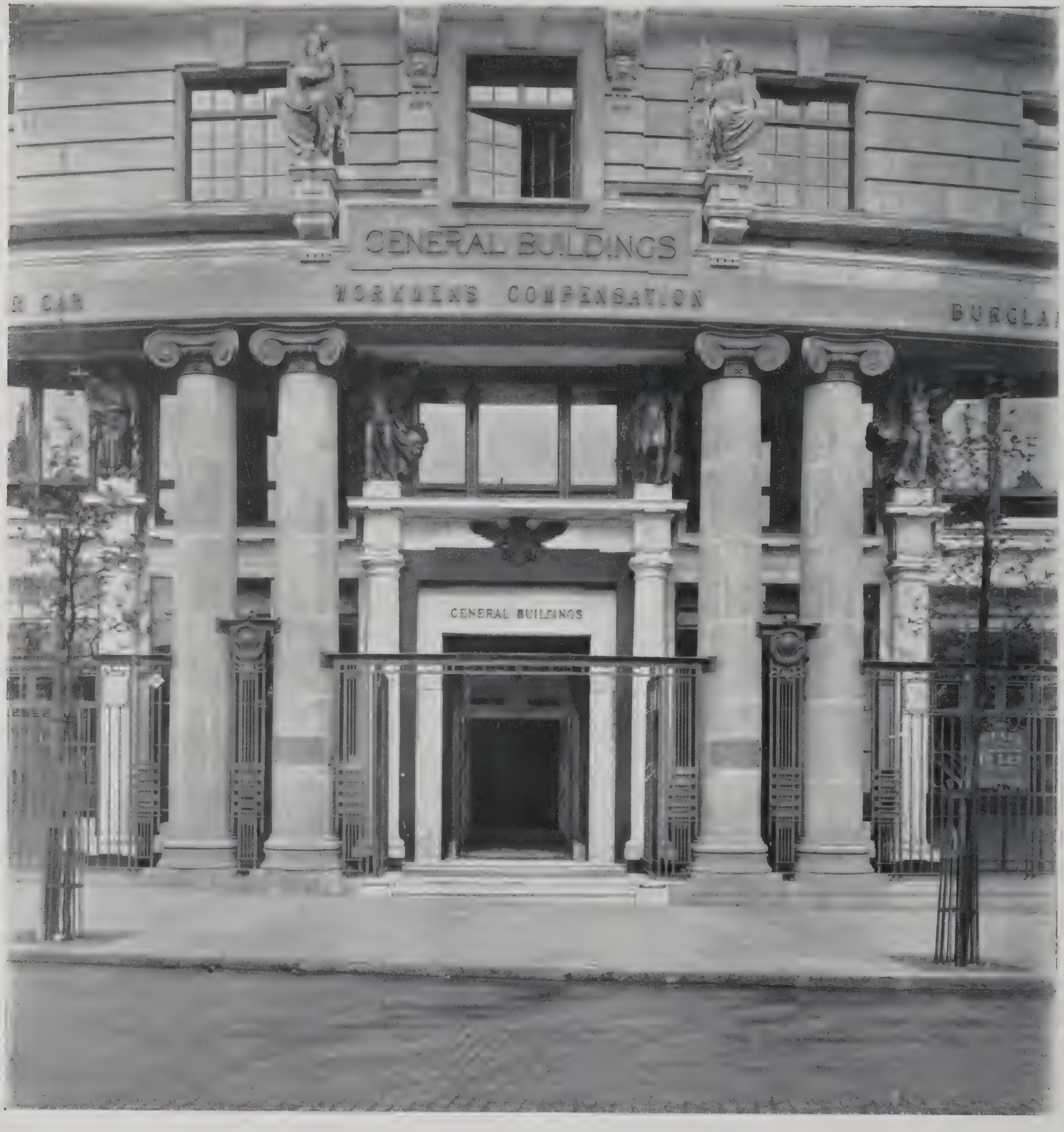
On the roof are the storage tanks for domestic and heating supplies and the rooms for the elevator motors. The boiler-house and fan-chambers are on the basement and sub-ground floors respectively. Fresh air is drawn



GENERAL BUILDINGS, ALDWYCH, LONDON: GROUND-FLOOR PLAN.
J. J. BURNET, A.R.S.A., F.R.I.B.A., ARCHITECT.

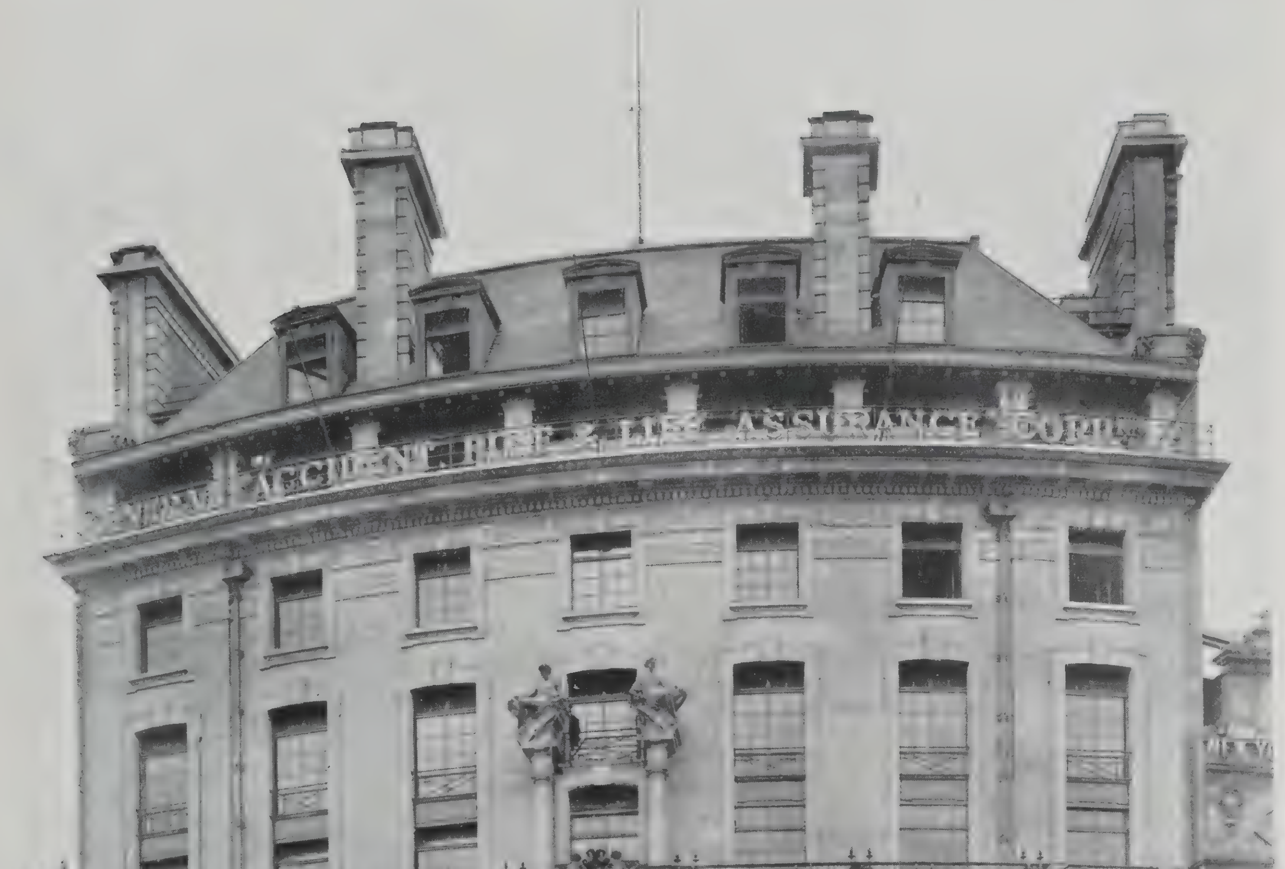
through an aperture and duct on the roof, down a shaft to the fan-chamber. Here it is screened, washed, and warmed, and then forced into the building. The heating is also supplemented by radiators. The electrical apparatus provided throughout the building embodies the most recent practice, and the telephone installation is extensive.

The general contractors were Messrs. Kerridge and Shaw, of Cambridge. The Portland stone was supplied by F. J. Barnes, granite work executed by James Whitehead and Sons, asphalt roofings damp-course, floors, etc., by Thomas Faldo and Co., Ltd., glazed bricks by the Farnley Iron Co., tiles by Messrs. Pilkington, stoves and grates by the Carron Co., plaster-work by G. P. Bankart (now associated with George Jackson and Sons, Ltd.), wood-carving by H. H. Martyn and Co., electric light fixtures by J. W. Singer and Sons, door furniture and cloakroom fixtures by James Gibbons, railings, etc., by the Bromsgrove Guild, wall hangings, furniture, carpets, etc., by Waring and Gillow, Ltd., and Cowtan and Sons, Ltd., lifts by Smith, Major and Stevens, Ltd., blinds by Stanley Jones and Co., Ltd., pavement lights by the British Luxfer Prism Syndicate, Ltd., partitions by Shepwood Partition, Ltd., and gates, railings, lift enclosures, etc., by Thomas Brawn and Co.

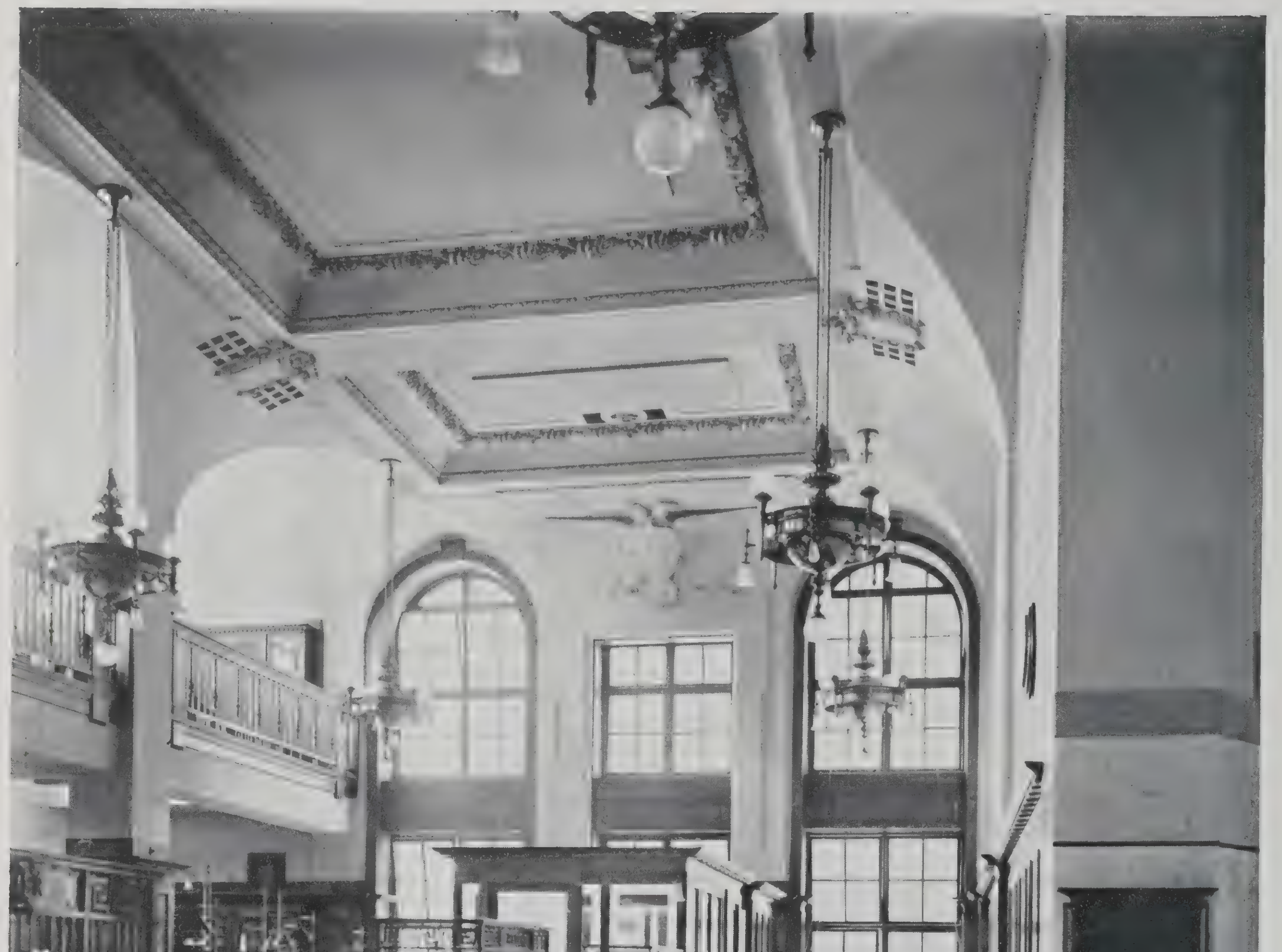


GENERAL BUILDINGS, ALDWYCH, LONDON: DETAIL OF LOWER PART OF FACADE.

J. J. BURNET, A.R.S.A., F.R.I.B.A., ARCHITECT.



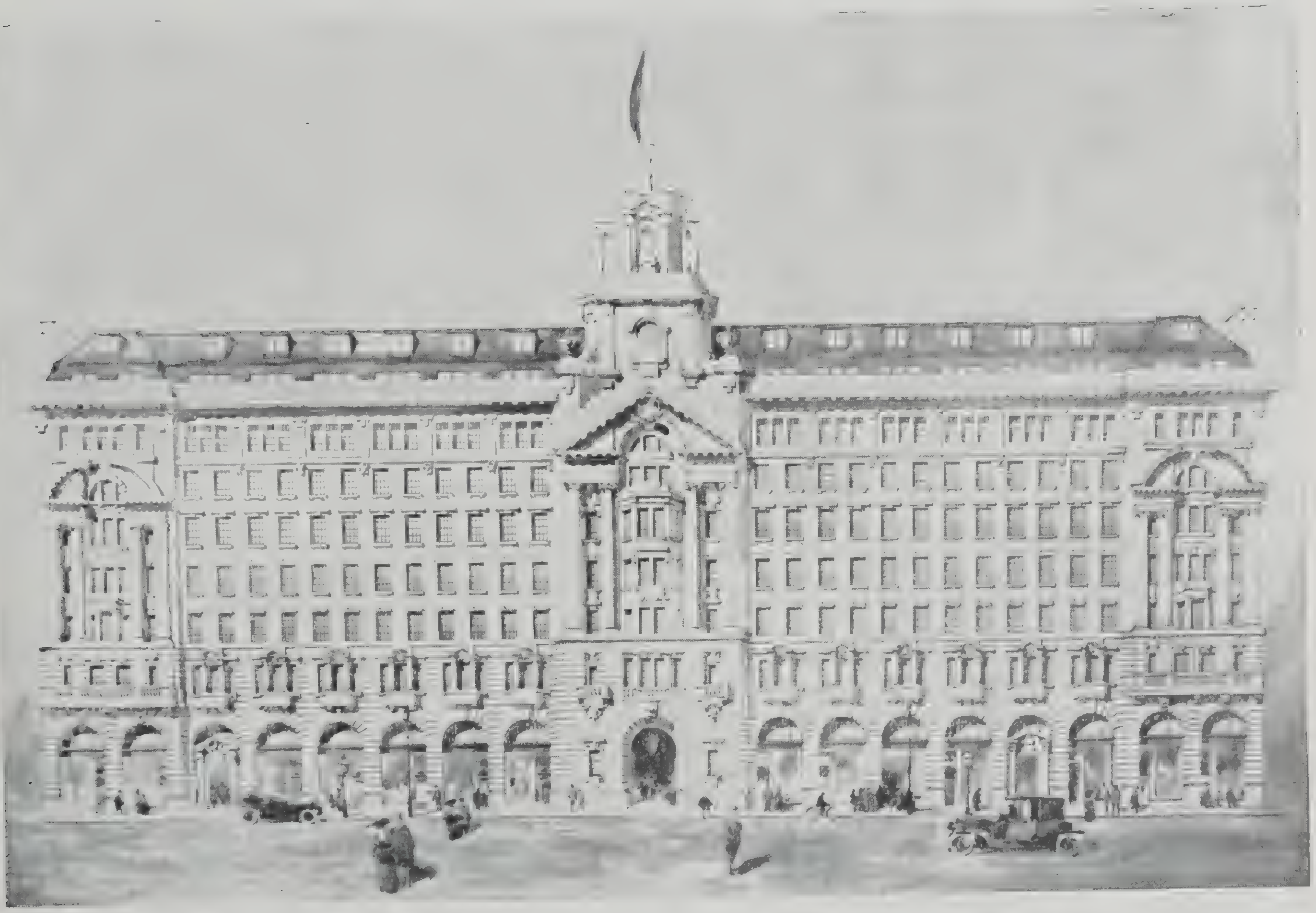
GENERAL BUILDINGS, ALDWYCH, LONDON. J. J. BURNET, A.R.S.A., F.R.I.B.A., ARCHITECT.



GENERAL BUILDINGS, ALDWYCH, LONDON: THE GENERAL OFFICE. J. J. BURNET, A.R.S.A., F.R.I.B.A., ARCHITECT.

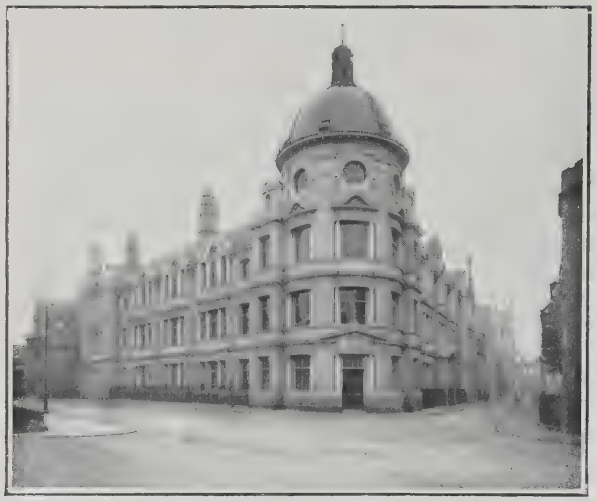
REINFORCED CONCRETE IN 1911.

The employment of Reinforced Concrete for building and construction work generally continues to meet with ever-increasing favour, and the list of works for which it has been used during the past year is larger than ever before. On the following pages are shown some of the most important examples.

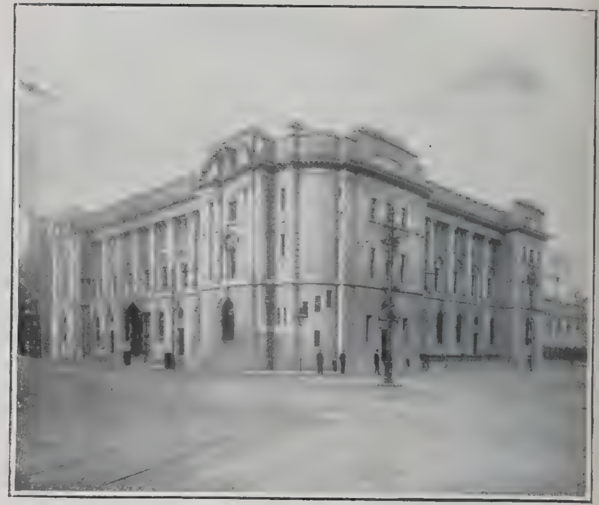


New Building for the Calico Printers' Association, Oxford Street, Manchester.
Charles Clegg and Son and Fryers and Penman, Joint Architects.

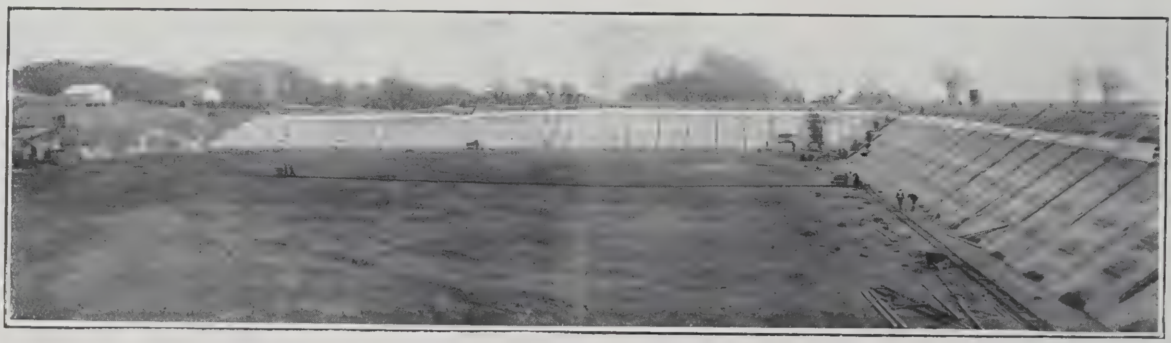
KLEINE REINFORCED HOLLOW BRICK FLOORS AND ROOFS (ABOUT 9 ACRES) USED IN THE ABOVE BUILDING.
(KLEINE PATENT FIRE-RESISTING FLOORING SYNDICATE, LTD.)



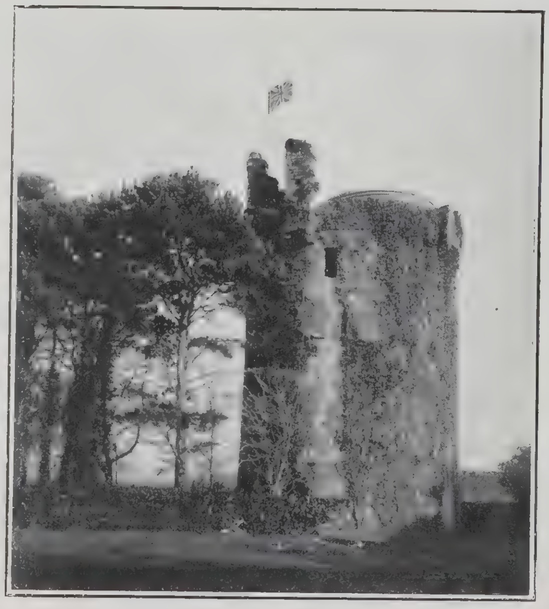
Central Higher Grade Schools, Aberdeen. J. A. O. Allen, Architect.



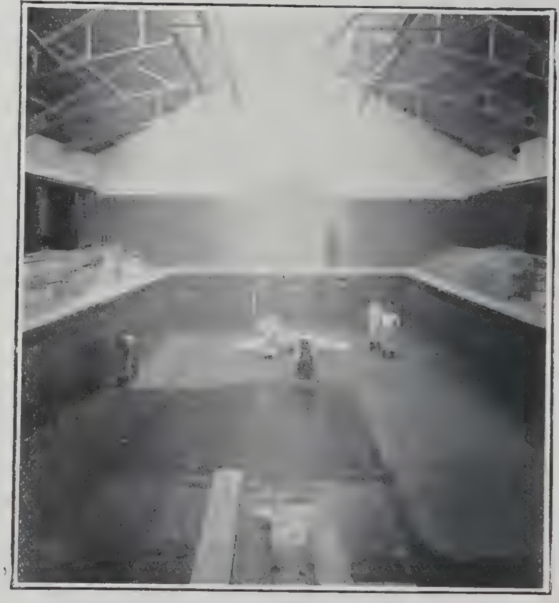
New General Post Office, Hull. (H.M. Office of Works.)



New Crown Hill Reservoir, Devonport Corporation Waterworks. F. Lillicrap, Borough Water Engineer.

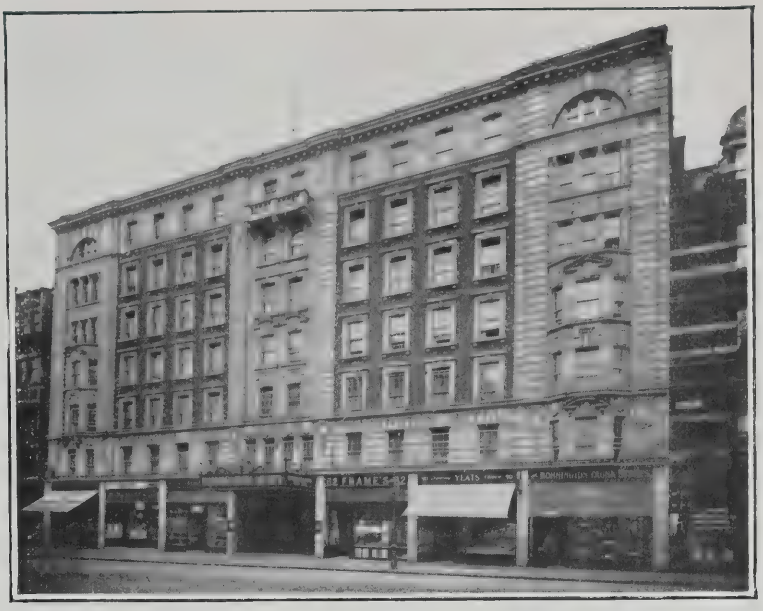


Expanded Steel-Concrete Water Tank in Old Tower, Waterford, Ireland. J. Horan, Engineer.

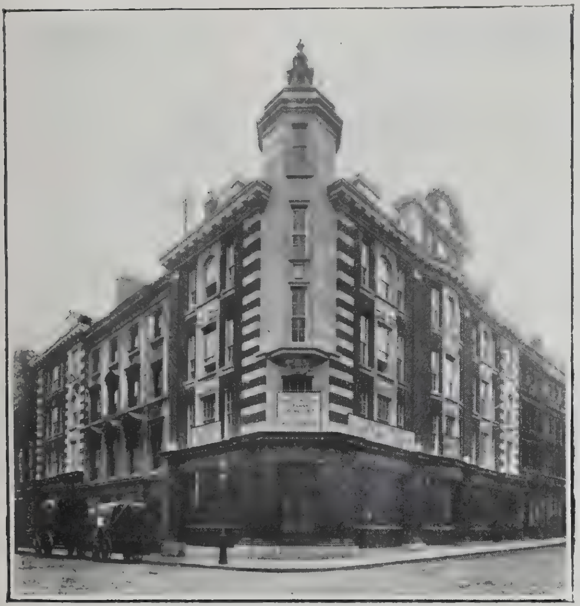


Public Baths, Jarrow. James H. Morton, F.R.I.B.A., Architect.

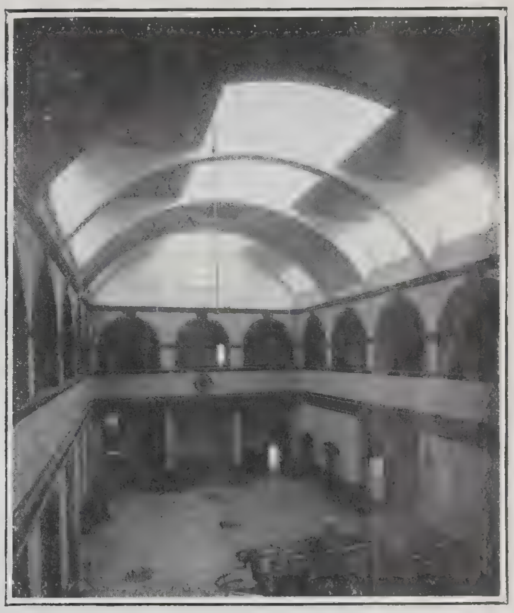
WORKS CARRIED OUT IN EXPANDED STEEL-CONCRETE.
(EXPANDED STEEL SUPPLIED BY THE EXPANDED METAL CO., LTD., LONDON.)



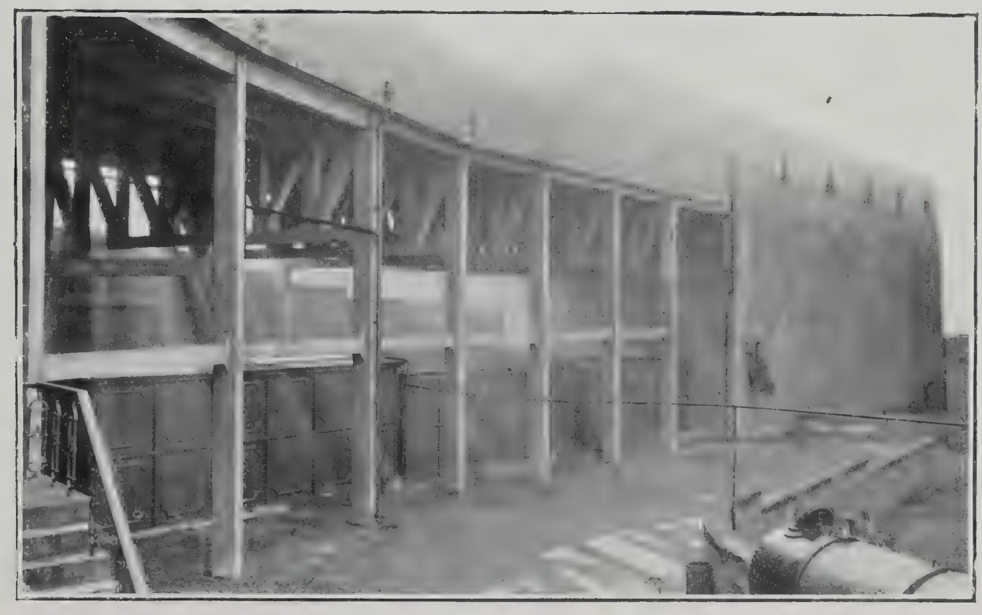
Bonnington Hotel, Southampton Row, London. W. E. Hazell, F.R.I.B.A., Architect.



Premises in Bedford Street, London.
E. Keynes Purchase, F.R.I.B.A., Architect.

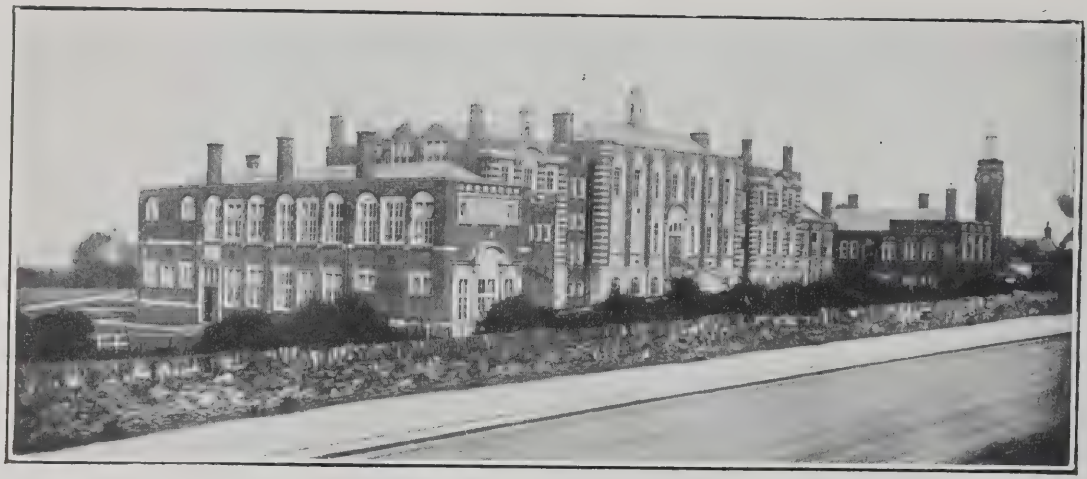


Royal Infirmary, Liverpool. Col. Doyle, Architect.

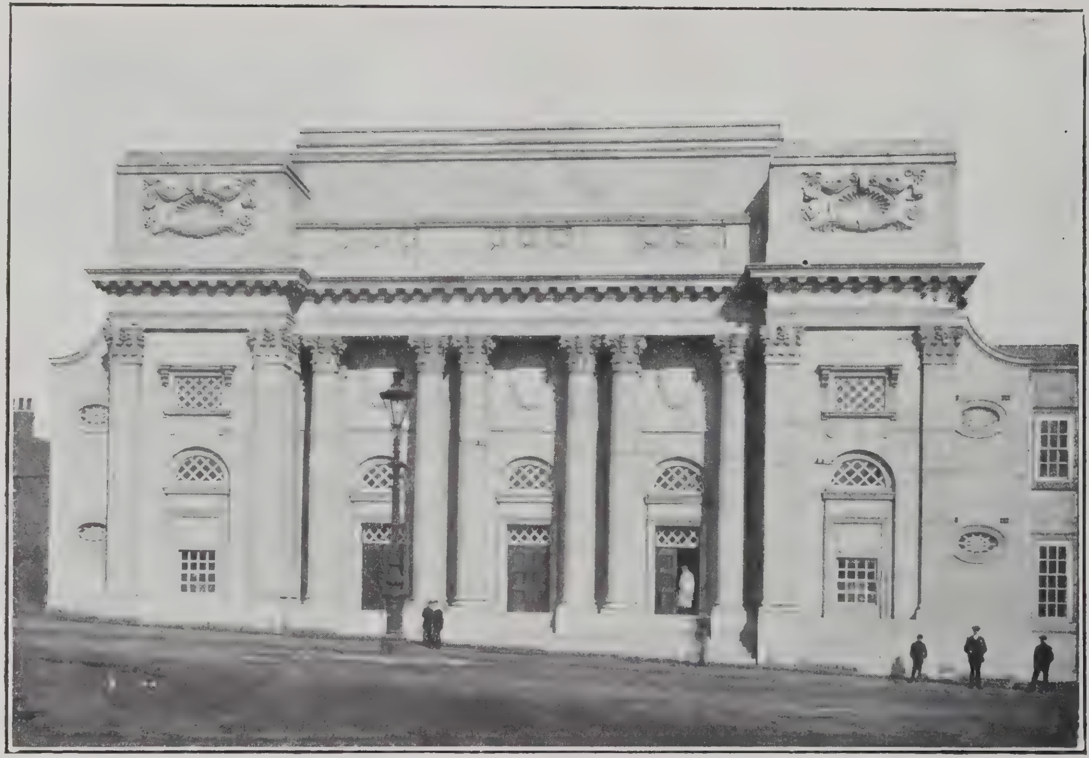


Gantry and Coal Bunkers for the Rochdale Gas Co.

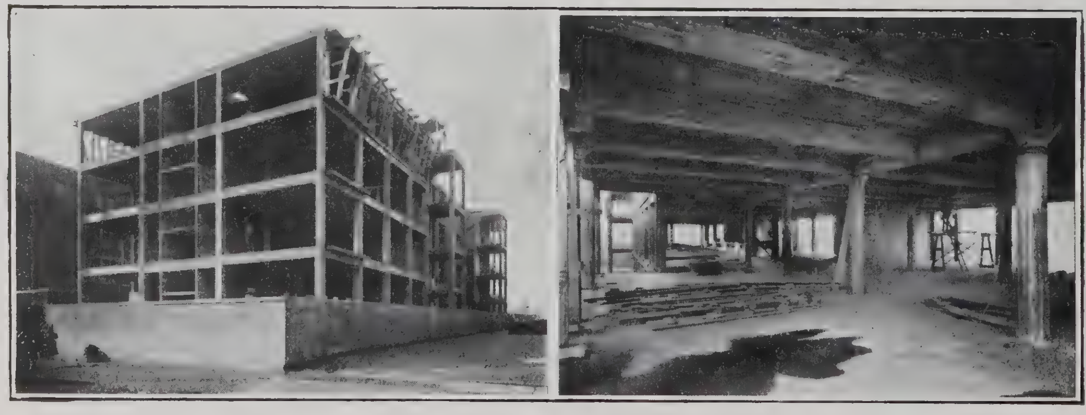
WORKS CARRIED OUT ON THE KAHN SYSTEM (TRUSSED CONCRETE STEEL CO., LTD.)



Girls' High School, Barnsley. Buckland and Farmer and Ashford, Architects.

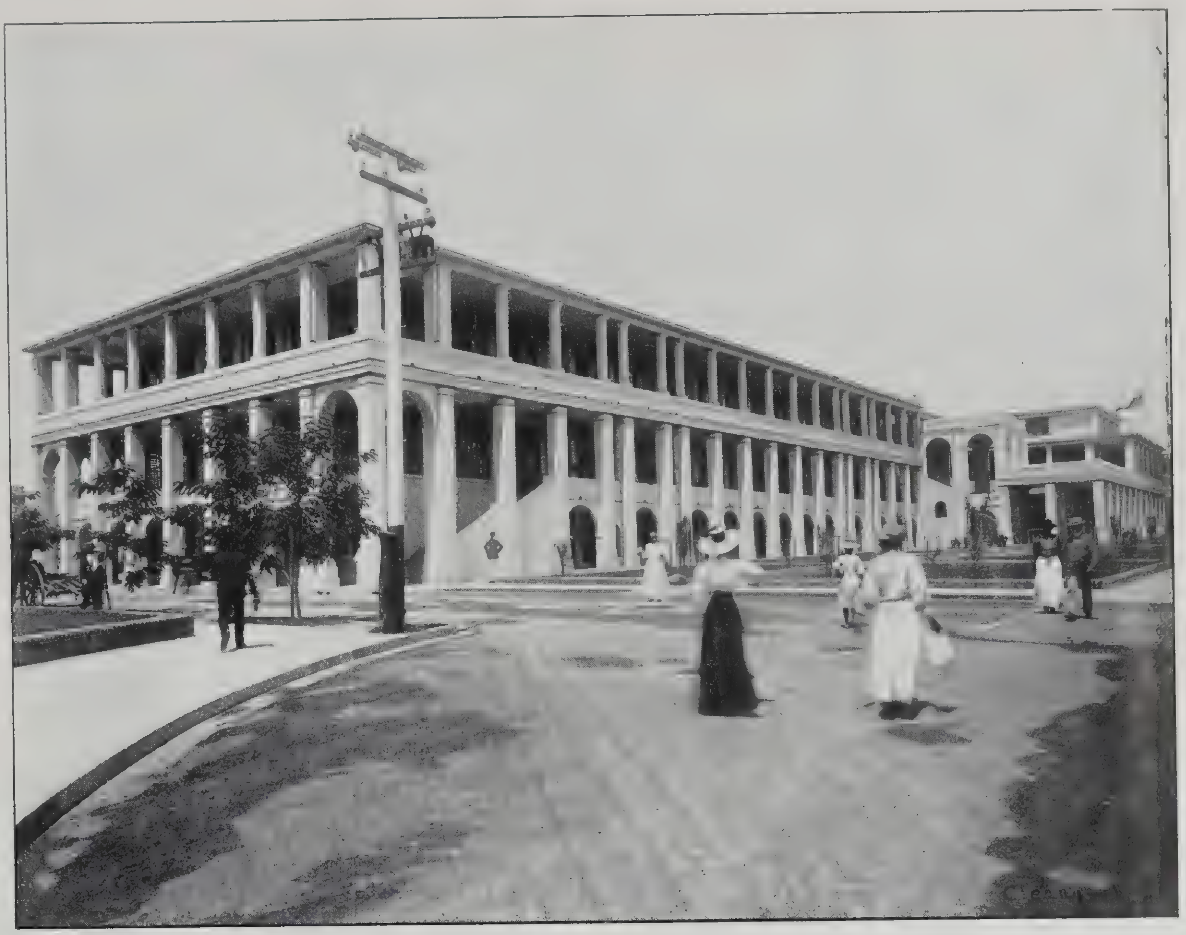


New Municipal Buildings, Burslem. Russell and Cooper, FF.R.I.B.A., Architects.

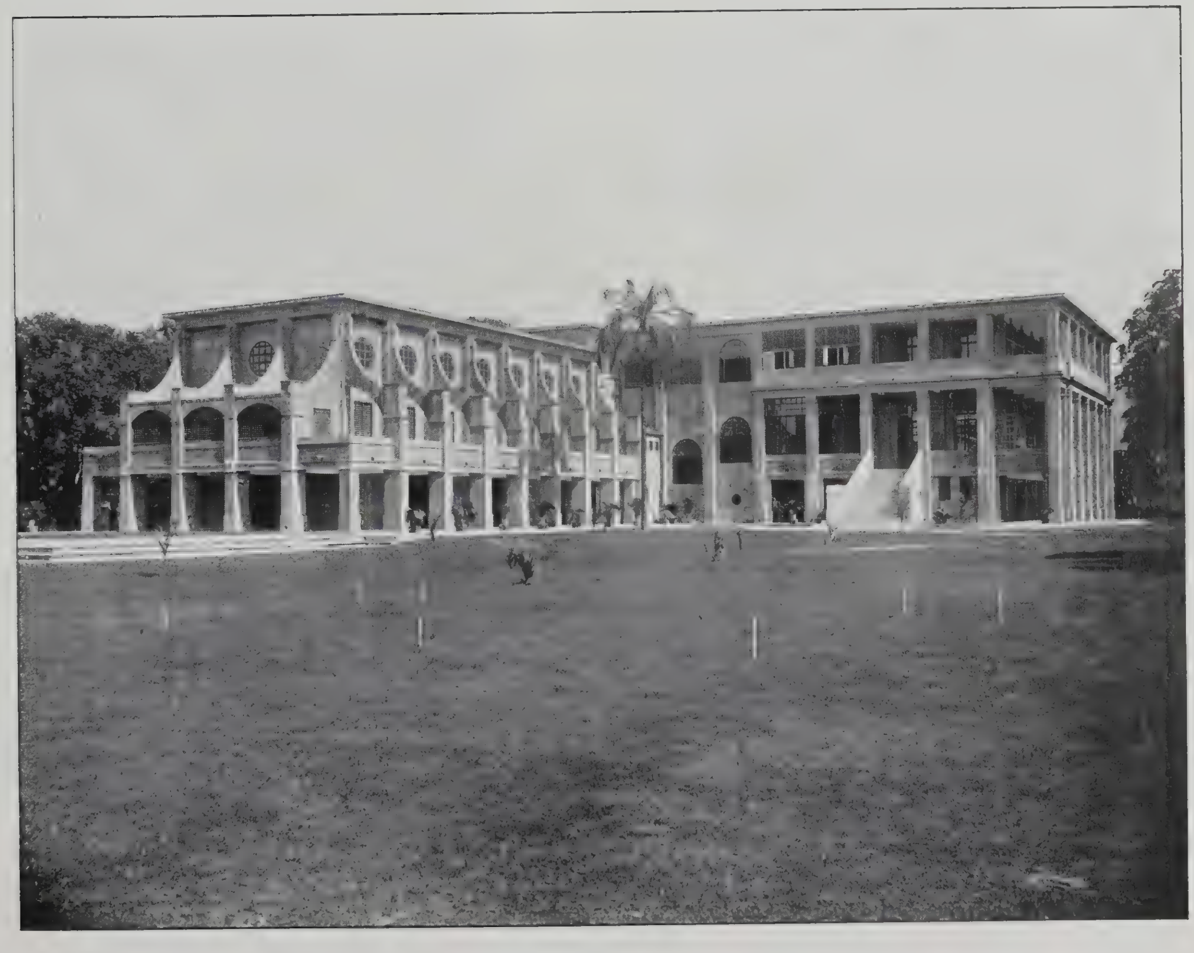


Telegraph Stores, Bordesley Green, Birmingham.

BUILDINGS ERECTED IN REINFORCED CONCRETE BY STUART'S GRANOLITHIC CO., LTD.



General Post Office and Treasury, Kingston, Jamaica. Nicholson and Corlette, FF.R.I.B.A., Architects.



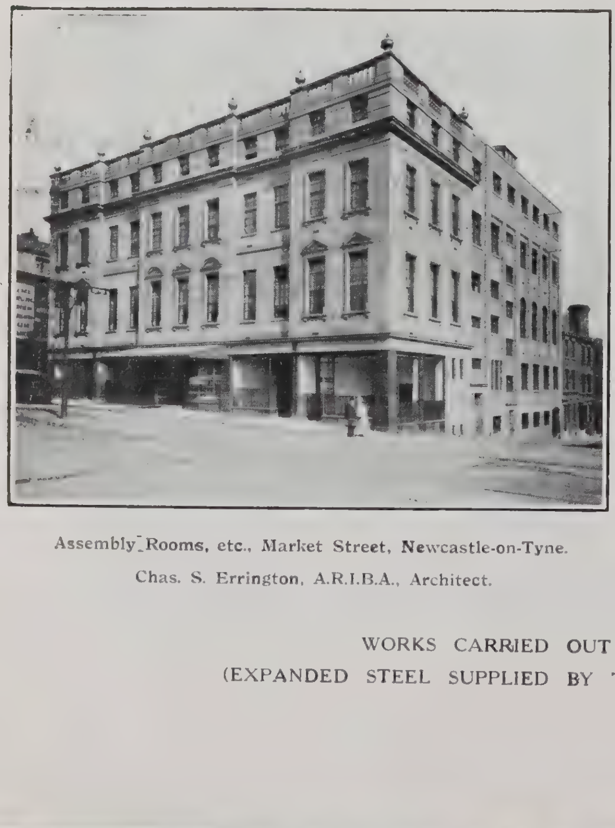
The King's House, Kingston, Jamaica. Nicholson and Corlette, FF.R.I.B.A., Architects.

BUILDINGS ERECTED ON THE COIGNET SYSTEM (EDMOND COIGNET, LTD.).

Esholt Sewerage Works, Bradford. Jas. Garfield, M.Inst.C.E., Engineer.

Expanded Steel-Concrete Foundation Raft, Torquay Pavilion.
H. A. Garrett, Borough Engineer.

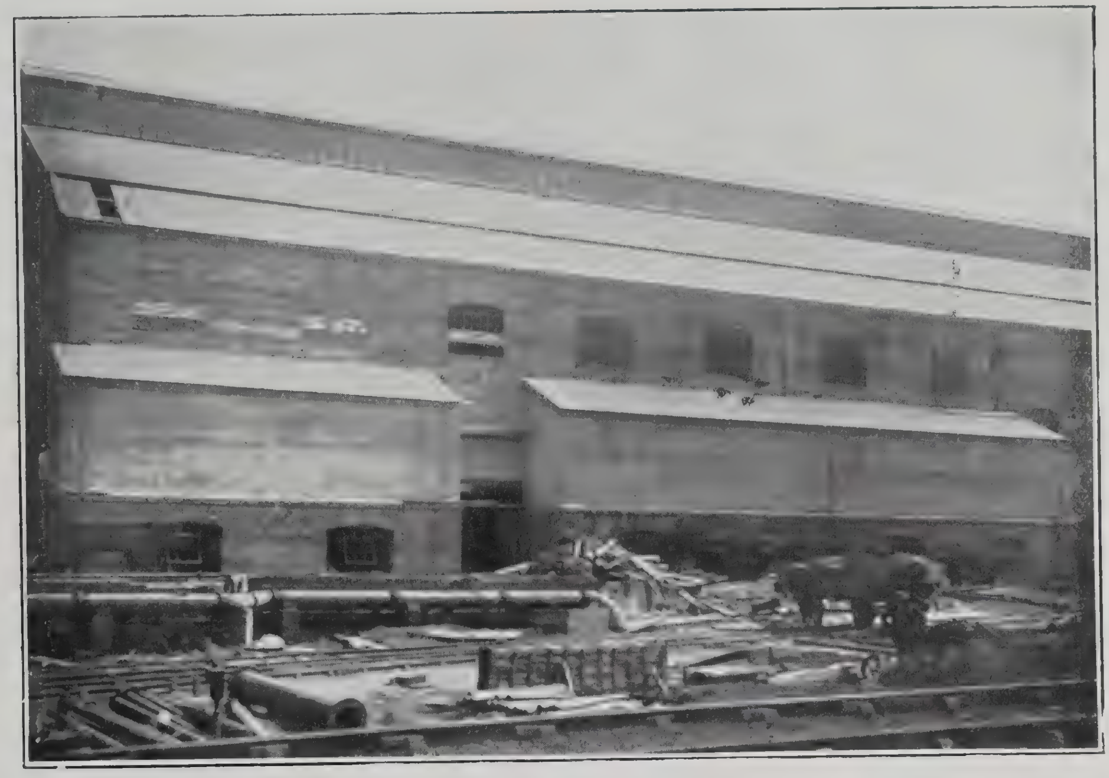
Corporation Gas Works, Birkenhead.
J. O. Paterson, M.Inst.C.E., Engineer.



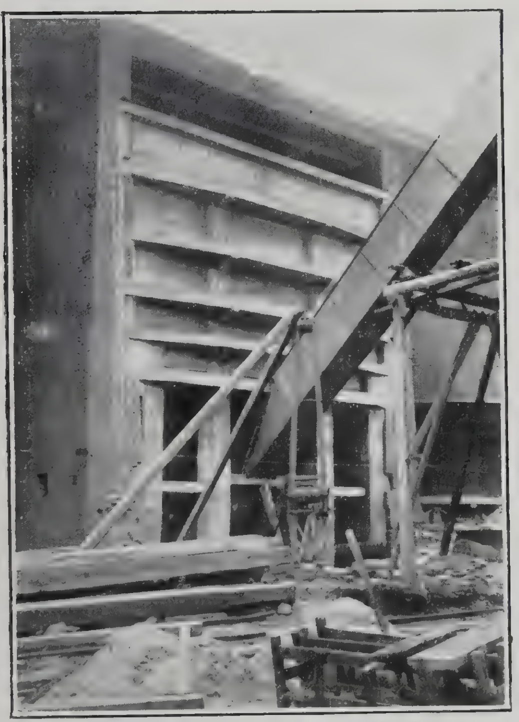
Assembly Rooms, etc., Market Street, Newcastle-on-Tyne.
Chas. S. Errington, A.R.I.B.A., Architect.

Alliance Assurance Co.'s Building, Newcastle-on-Tyne.
Newcombe and Newcombe, F. and A.R.I.B.A., Architects.

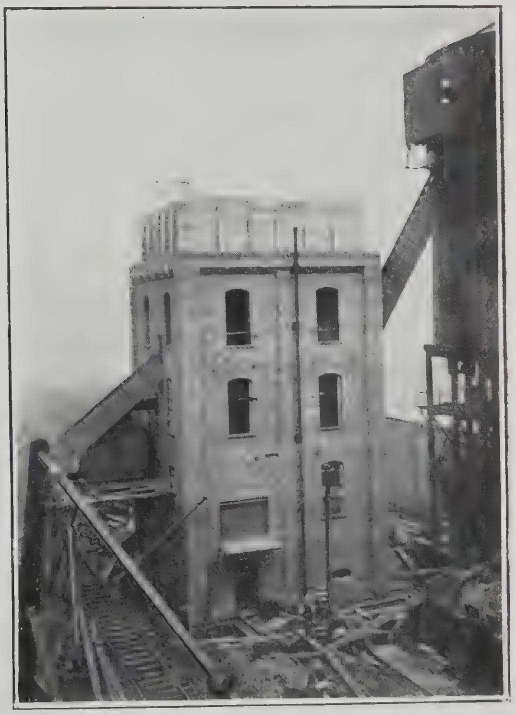
WORKS CARRIED OUT IN EXPANDED STEEL-CONCRETE.
(EXPANDED STEEL SUPPLIED BY THE EXPANDED METAL CO., LTD., LONDON.)



Electric Power House, Skinningrove, Yorks.

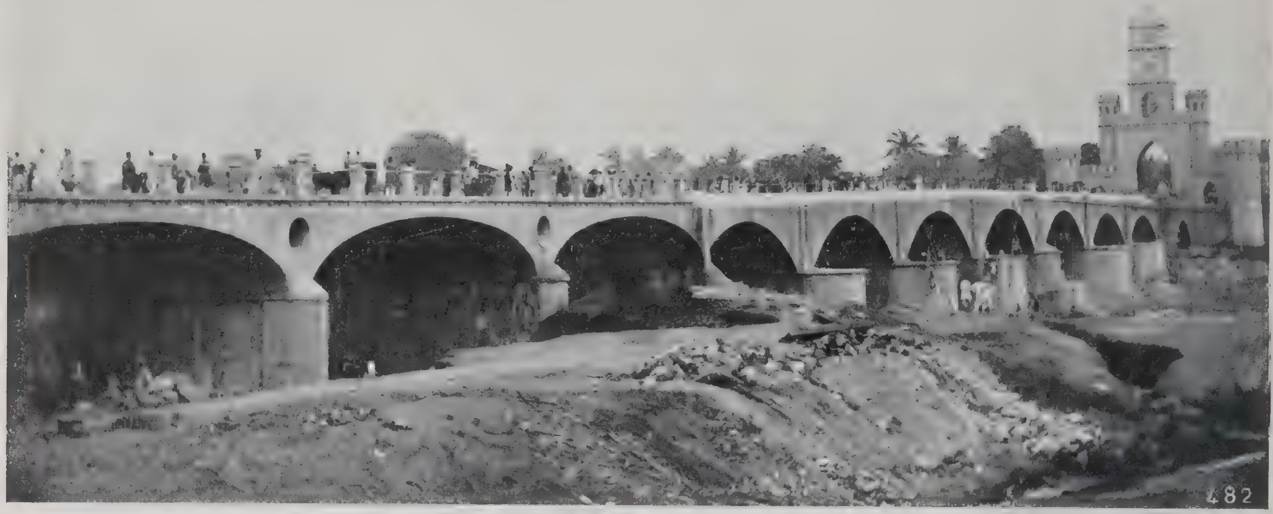


Coal Bunker, Skinningrove, Yorks.

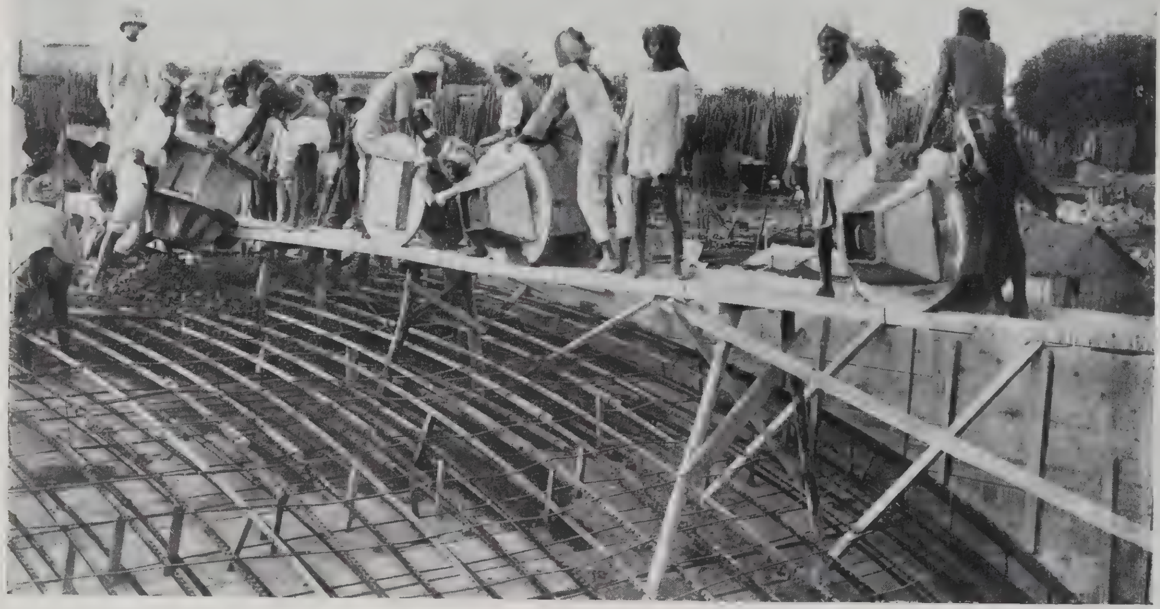


Water Tower, Skinningrove, Yorks.

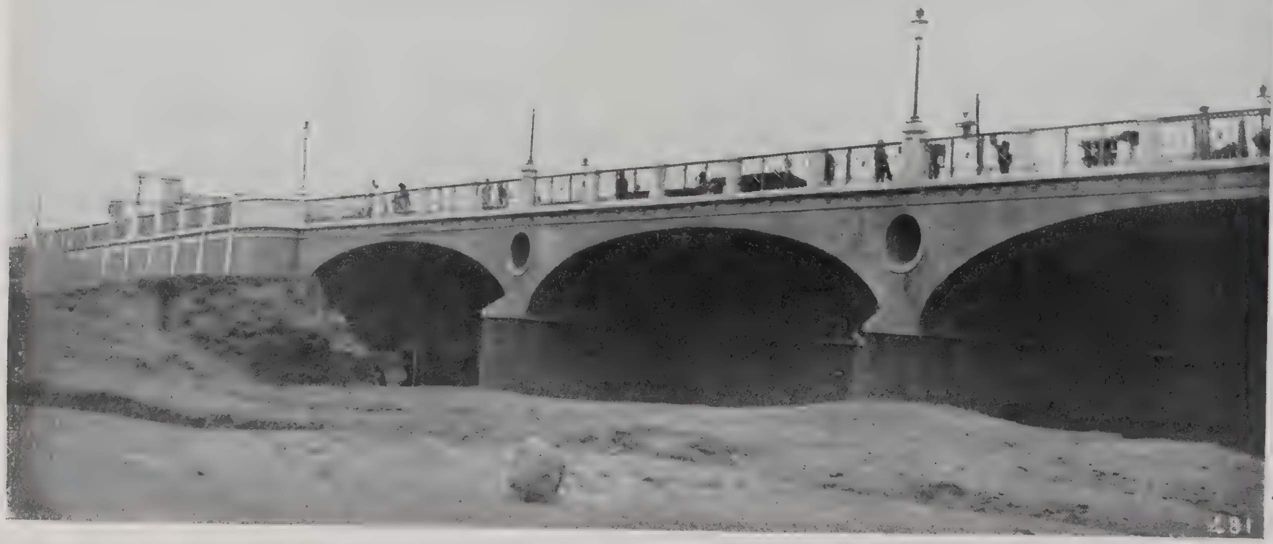
WORKS CARRIED OUT ON THE LOCK WOVEN MESH SYSTEM (GEORGE F. WEST AND CO.).



The Afzalgunj Bridge: View showing the old portion of masonry arches on the right, and the new reinforced concrete arches on the left.

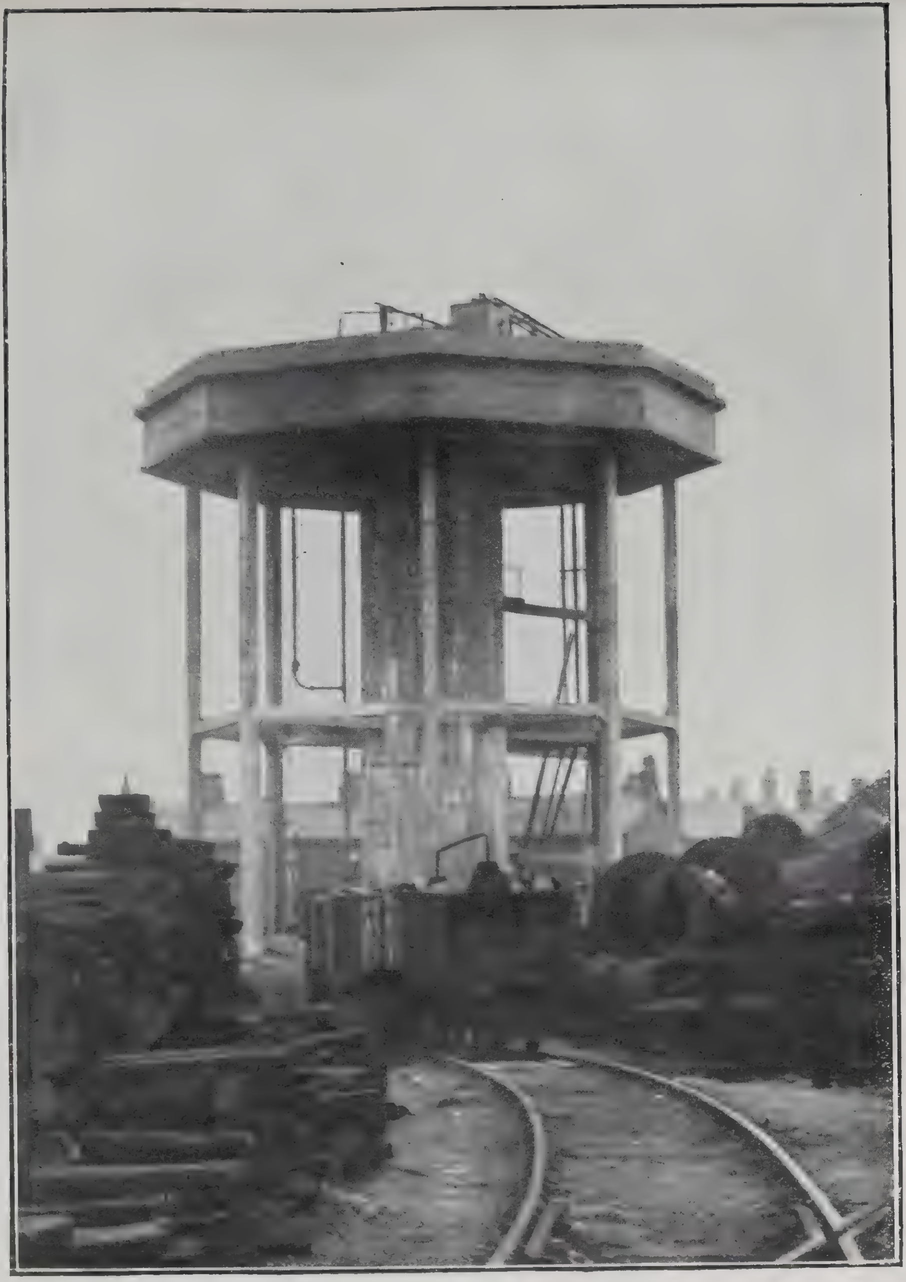


The Afzalgunj Bridge: View showing the filling of the last arch, and an economical way of conveying and mixing the concrete.



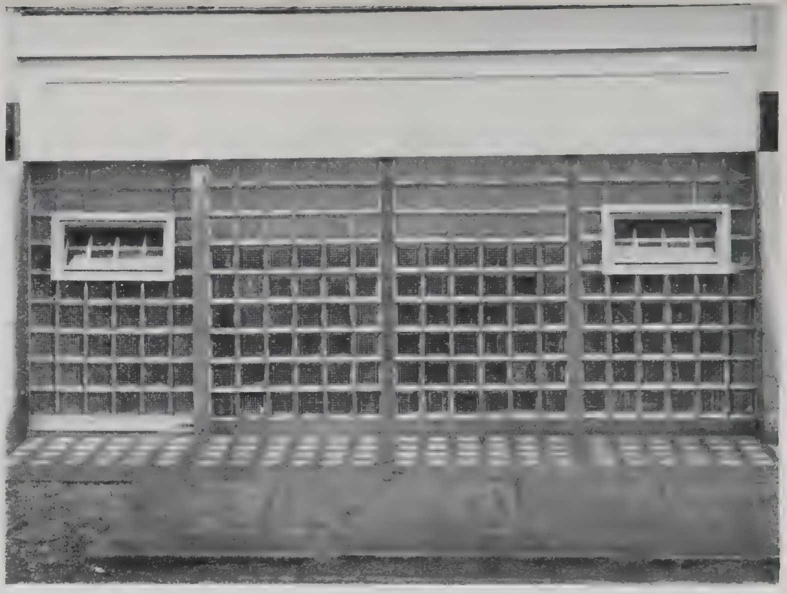
The Afzalgunj Bridge, as completed.

WORK CONSTRUCTED ON THE INDENTED BAR SYSTEM (INDENTED BAR AND CONCRETE ENGINEERING CO., LTD.).

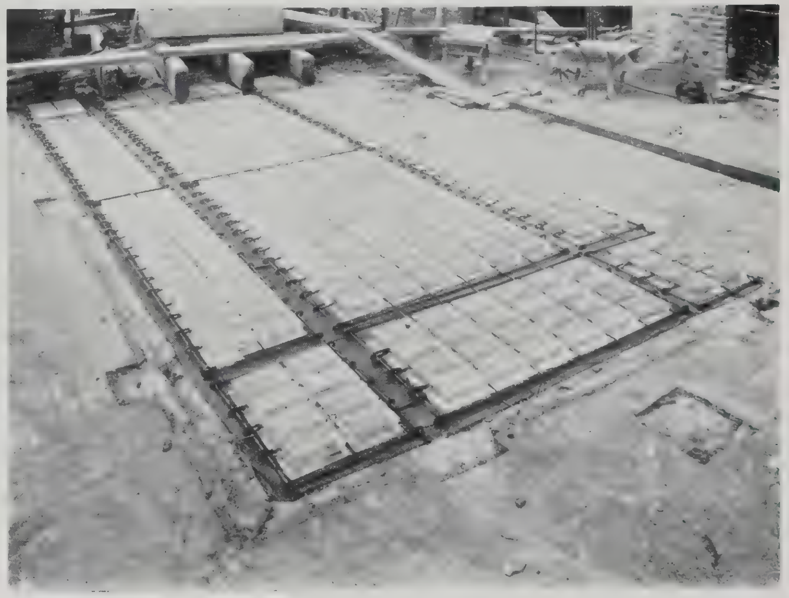


200,000-Gallon Water-Softening and Storage Tank at Sir W. G. Armstrong, Whitworth and Co.'s Works, Openshaw, Manchester.

REINFORCED CONCRETE WORK BY WILLIAM MOSS AND SONS.
(WATER-SOFTENING PLANT BY LASSEN AND HJORT.)

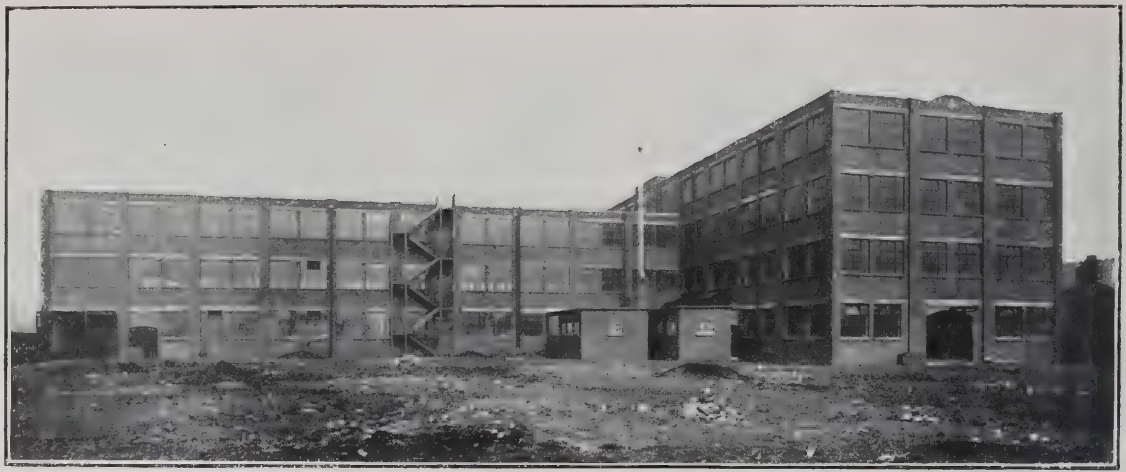


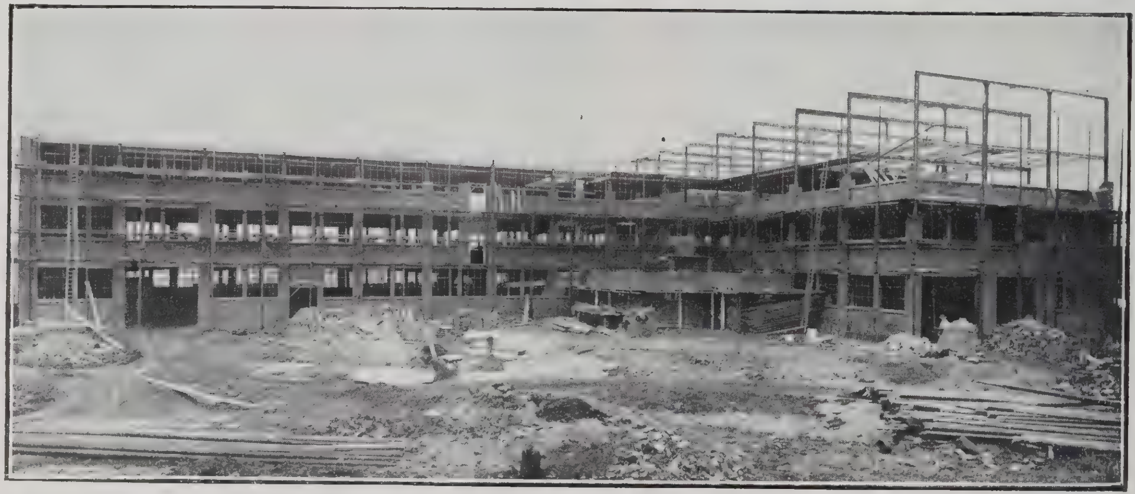
Pavement and Stallboard Lights at the Kod Building, Kingsway, London.



Roof Light in Course of Construction at Whiteley's New Premises, Queen's Road, London, W.

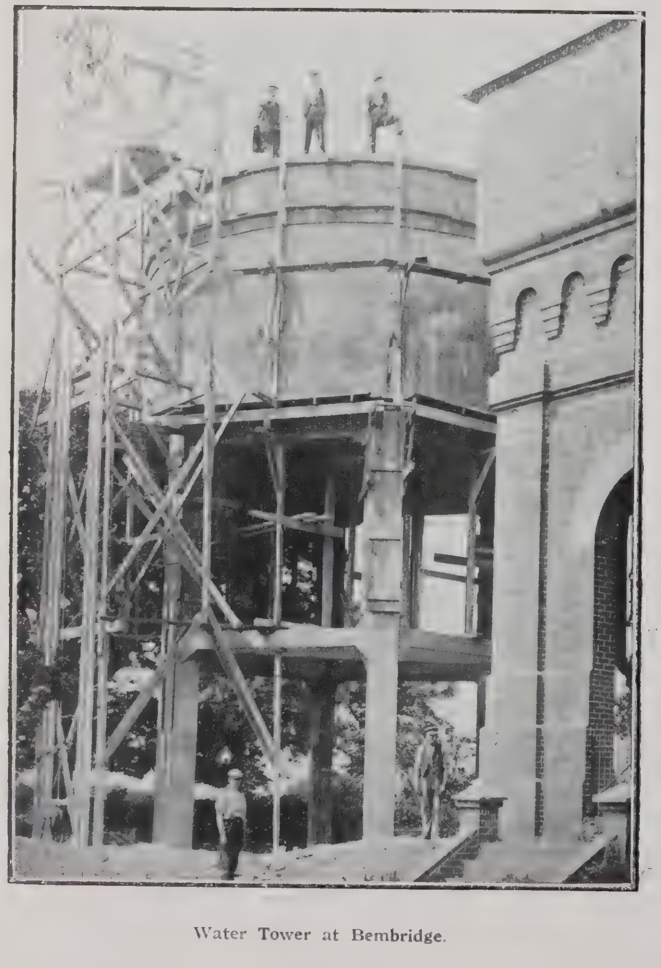
"FERRO-GLASS" BY J. A. KING AND CO.



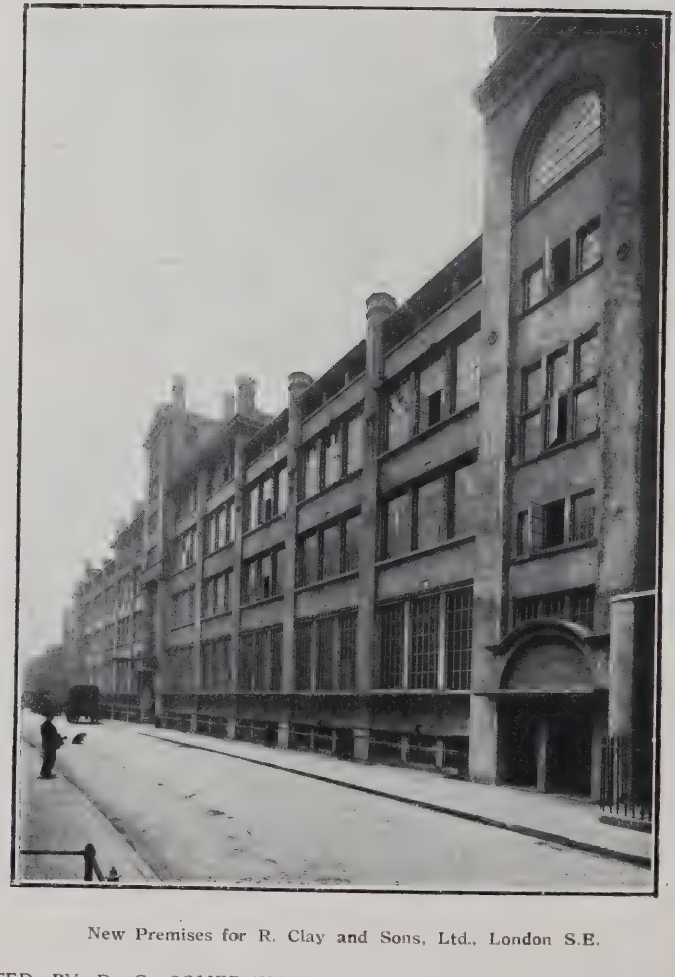


Stud and Link Factory, Witton, near Birmingham. Birkett J. Emery, Architect.

STRUCTURAL STEELWORK AND REINFORCED CONCRETE FLOORS BY A. D. DAWNAY AND SONS, LTD.



Water Tower at Bembridge.



New Premises for R. Clay and Sons, Ltd., London S.E.

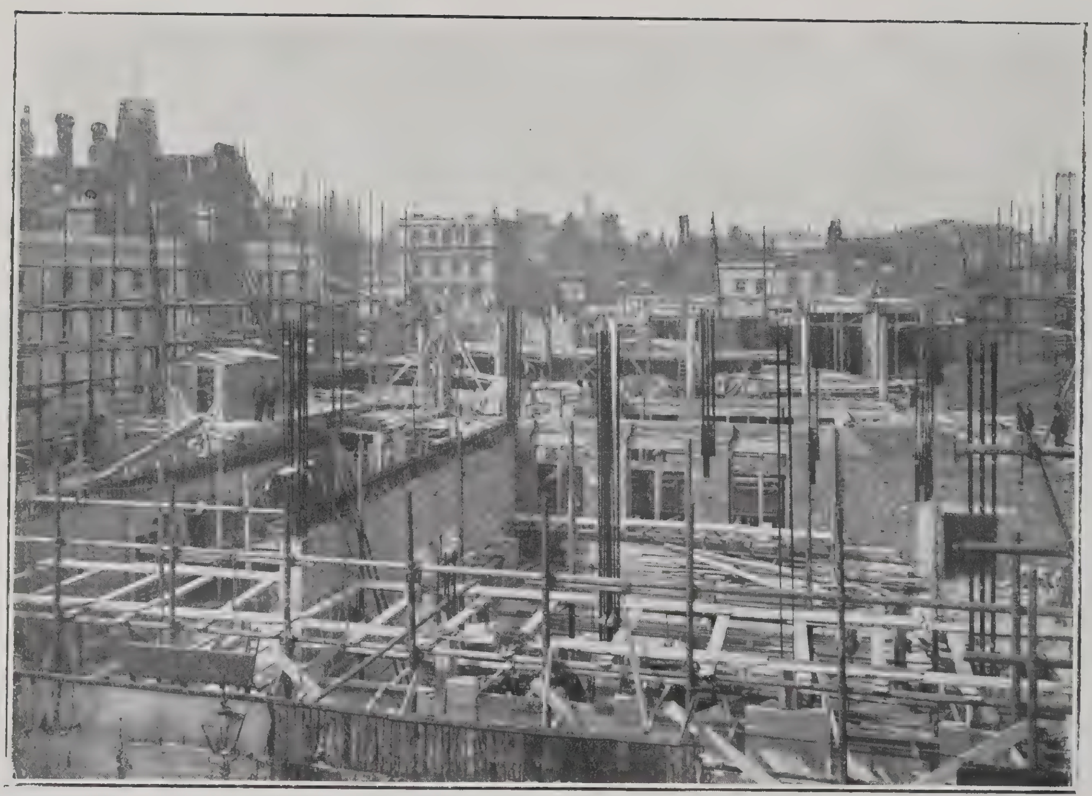
REINFORCED CONCRETE WORK EXECUTED BY D. G. SOMERVILLE AND CO.

Government House, Salisbury. Detmar Blow, F.R.I.B.A., Architect.

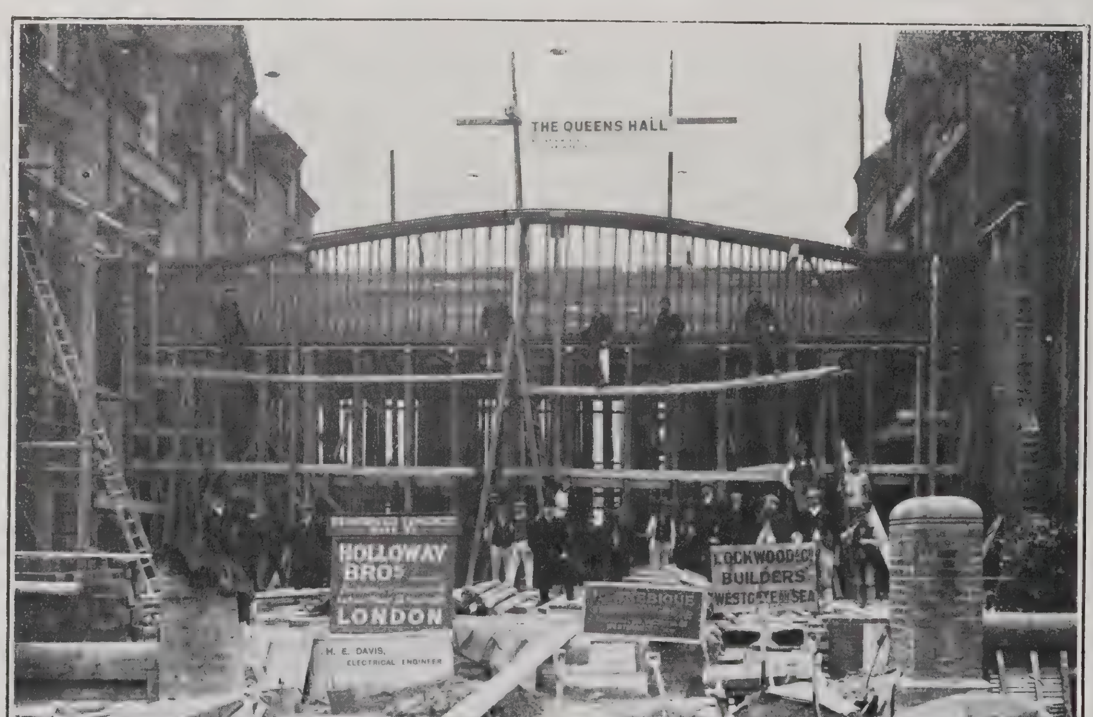
Farnworth Bridge, near Widnes, Cheshire.

Stranmillis Bridge, Belfast.

WORKS CARRIED OUT ON THE KAHN SYSTEM (TRUSSED CONCRETE STEEL CO., LTD.).

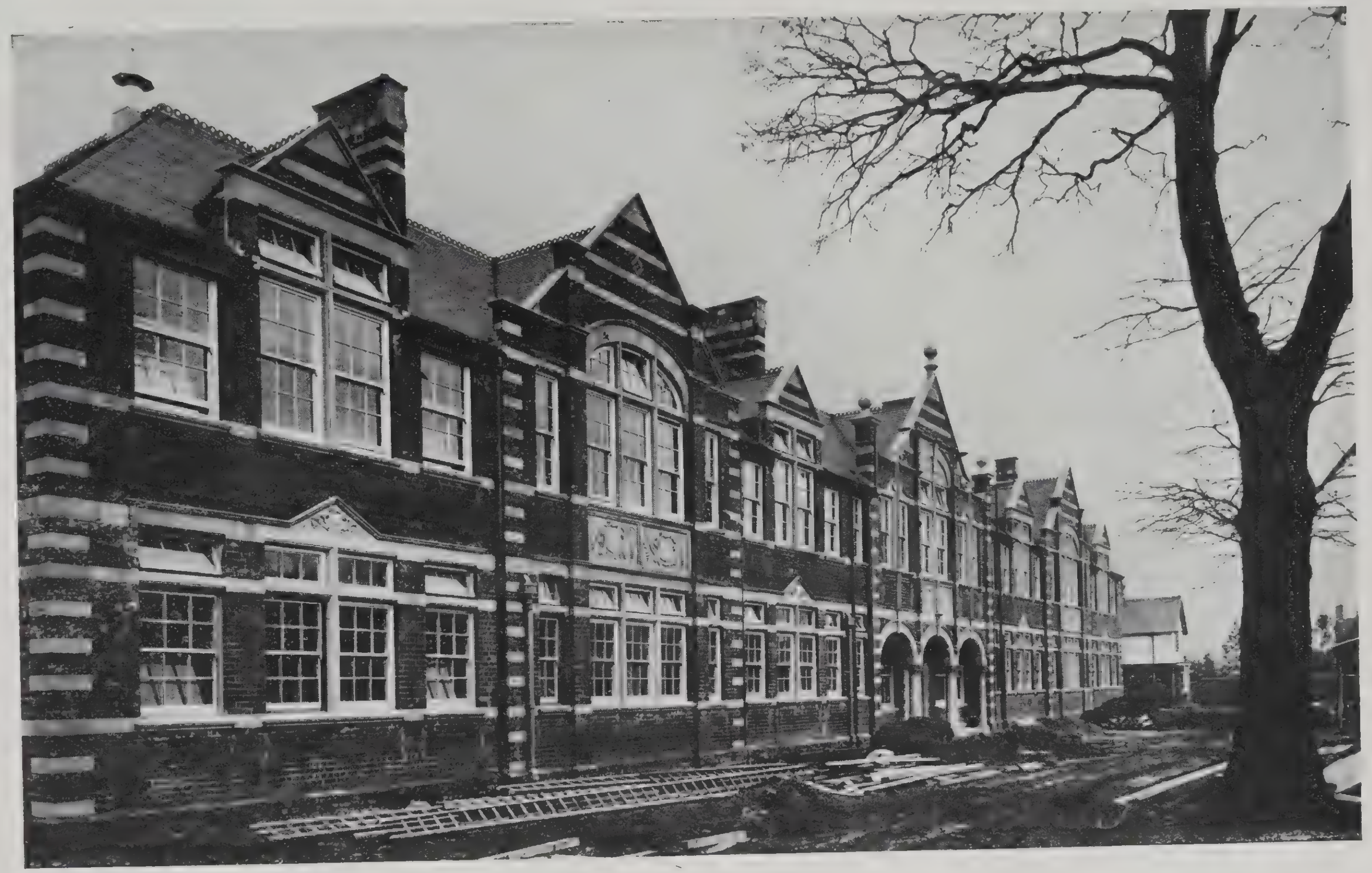


Reinforcement of the New Y.M.C.A. Premises, Tottenham Court Road, London.
Rowland Plumbe, F.R.I.B.A., Architect.


THE QUEENS HALL
HOLLOWAY BROS
LONDON
H. E. DAVIS, ELECTRICAL ENGINEER
LOCKWOOD & CO BUILDERS WESTGATE ON SEA

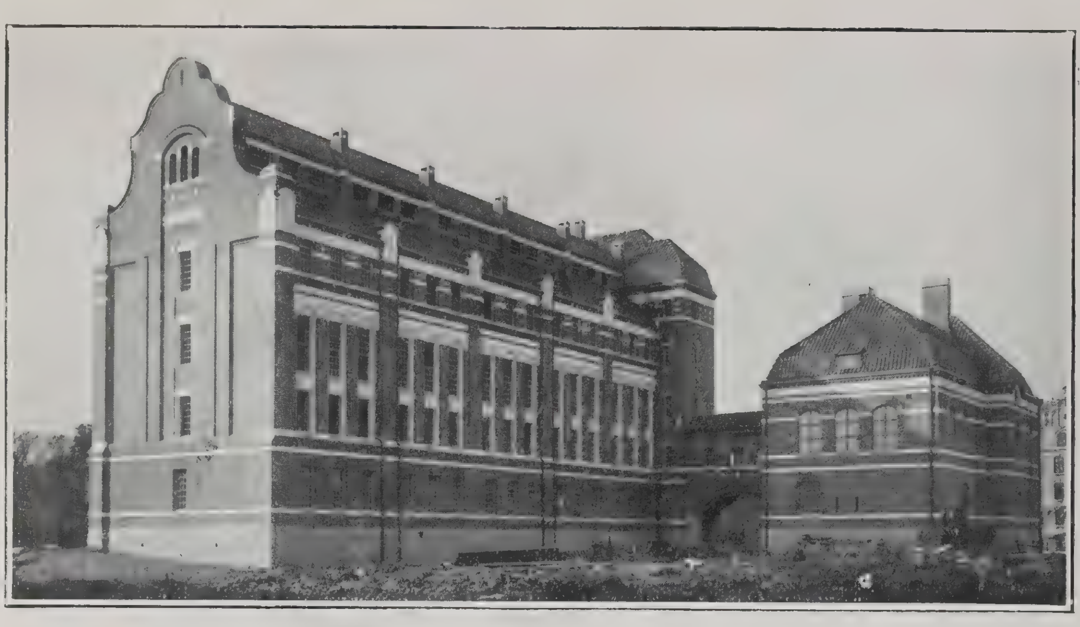
Queen's Hall, Highcliffe Hotel, Margate. Reeve and Reeve, Architects.

WORKS CARRIED OUT IN REINFORCED CONCRETE BY HOLLOWAY BROS. (LONDON), LTD.



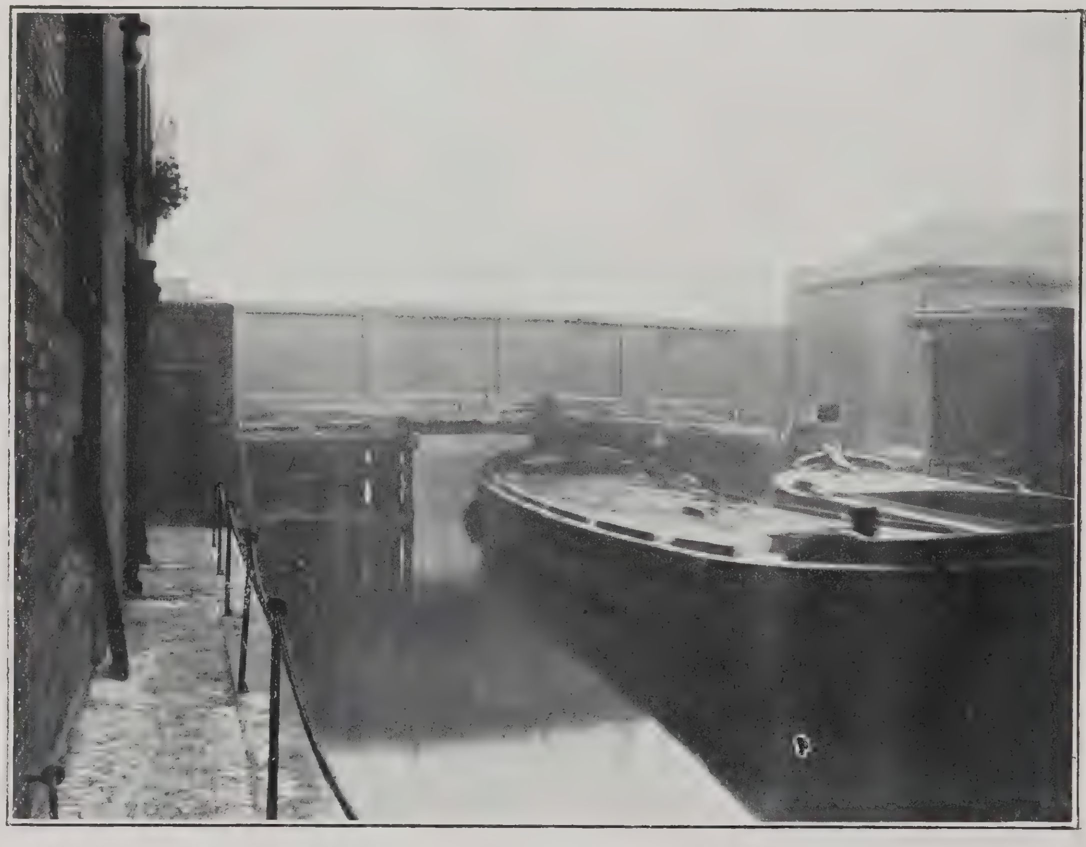
King's Norton Schools. Pritchard and Pritchard, Architects.

ARTIFICIAL STONE DRESSINGS, STEPS AND LANDINGS, GRANOLITHIC PAVING AND REINFORCED CONCRETE
BY THE EMPIRE STONE CO., LTD.



Telephone Exchange, Gothenburg.

CARRIED OUT ON THE KAHN SYSTEM (TRUSSED CONCRETE STEEL CO., LTD.).



Whiston Street Bridge, Shoreditch

REINFORCED CONCRETE WORK BY HIGGS AND HILL, LTD.

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